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WORKSHOP

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HEARING ROOM A

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Reported by:
Alan Meade
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COMMISSIONERS PRESENT:

James Boyd, Presiding Member

John Geesman, Commissioner

William Keese, Commissioner

STAFF PRESENT:

Scott Tomashefsky

Mike Smith

OTHERS PRESENT:

Chuck Mizutani

Scott Matthews

Gordon Schremp

Greg Greenwood

Joe Sparano

Claude Corkodel III

Mike Eaves

Mike Horner

Steve Howell

Randall von Wedel

Dave Modisette

Mike Scheibel

I N D E X

P R O C E E D I N G S

PRESIDING MEMBER BOYD: I'd like to welcome you to what has definitely become yet another in a long series of hearing workshops and meetings that the Energy Commission has held in preparation of its Integrated Energy Policy Report for submission to the Governor and legislation this coming November.

I'm Jim Boyd. I'm the Commissioner who chairs the Integrated Energy Policy report committee. On my left is Commissioner Keese. Chairman Keese is the second member of the Integrated Energy Policy report committee. And on my right, Commissioner Geesman is my fellow member on the transportation committee. And I appreciate his sitting in with us.

On my far right Mr. Jones is Mr. Geesman's advisor. Mike Smith, my advisor, Scott Tomashefsky on my far left is Chairman Keese's advisor. So we look forward to this day.

Today's committee hearing is the first of three hearings scheduled this week and next week, again, under the auspices of the preparation of the 2003 Integrated Energy Policy report. This is the first committee hearing to review the

staff's, I'll call it, final draft of a report.

Today's subject being transportation and fuel's technology and infrastructure assessment. Next week we will deal with the other two final draft reports of the staff, electricity and natural gas, and the public interest energy strategies.

Our purpose of today's hearing is to receive input and comments that the committee and the Commissioners will take under consideration, and we'll use to assist the committee and the committees of the Commission. And the Commissioners formulating and developing the policy recommendations today for transportation energy sector that will be submitted in our final report to the Governor and legislature.

Today's report, and today's discussions are benefitted by, or -- well, they're definitely benefitted by, and have been contributed to by the many, many reports and discussions that this agency in one case in concert with the Air Resource Board have produced over the past year plus.

In the area of transportation, transportation fuels and what have you, everything

from the pipeline feasibility report that our Commission just acted on yesterday, to the two requirements of AB2076, strategic fuel reserve and the recommendations on reducing our dependance on petroleum all become a background material to be considered and used in the final report that we will produce for the Integrated Policy report subject in this area.

We find ourselves in a current situation confronting our transportation energy sector that has become all too familiar to everyone in this state over the last weeks and months. We've had several hearings that have pretty well demonstrated that demand has outstripped out ability to supply transportation fuels from our own in-state sources.

We've seen, except for small incremental improvements, where refinery capacity has not been increased, and we don't see plans for any increases that will be sufficient to meet the projections of demand. And while in the near term we have adequate supplies of crude oil, the need to import increasing amounts of crude oil are quite evident.

And in this state the need to import

increasing amounts of blending components and finished transportation fuel products are an inevitable situation that we face that put further constraints on our ability on a daily basis to seemingly meet demand. So to date it's a little unclear to us how the petroleum industry is going to meet the growing gap between demand and in-state supply.

And we hope in today's hearing, which just adds to many others we've had, we'll get some more specificity and perhaps some recommendations to help us with our recommendations. A pretty universal concern has risen about the ability of out fuel infrastructure. Is it adequate? Is it reliable? Is it reliable to handle the imports to store and to distribute the increasing imports that we know we have to take?

And unfortunately, this week and last we're suffering from another aspect of the weaknesses in the infrastructure, the ruptured pipeline in Arizona. It had a ripple effect felt in California, as we knew such things would. Our system is running very tight. In the long-term though, we need to consider sources of crude oil that will benefit California.

And given the declining outputs of our own state, and the Alaskan resource that we've relied on for so long, we do have a concern about the future with regard to crude, as well as the need to import finished product and blending components. And we cannot not consider the competition from foreign demand for both crude and for blending components and finished product.

I heard a statistic the other day that just feeds into a concern I have. I've often talked about what happens when developing nations even get anywhere close to us in terms of meeting their mobility needs, i.e. China and India for instance. And I heard a statistic the other day that, although I have not verified it, I have no reason not to believe it, that the per capita vehicles in this -- there's 250 vehicles per person in the United States.

It's eight per person in China and India. When they get anywhere near where we are the demand for transportation fuel is going to be pretty excessive. And there's lots of headlines these days about China becoming a world oil buyer, etcetera, etcetera. So that will just add to the concerns of this country and to the State of

California.

The committee, working with the staff, posed a set of questions for stake holders to respond to. I know it was on fairly short notice. And we appreciate any input that we can get. These were placed only our website at the beginning of this week.

But in addition, let me mention some other areas that I think we're seeking input on today. And although we're sitting here in a very formal looking setting, I want to encourage as much informality as possible, and to maximize the exchange of information and data.

And looking in the audience, I want to welcome Mike Scheibel, the deputy executive officer of the Air Resources Board who's worked with us so closing on 2076 and all of the hyper products to date.

I question, does the draft report capture the major policy issues facing California's transportation energy sector? I think that's a key issue that this Commission and these Commissioners have to address. Another related question, is legislation needed to ensure that a reliable adequate and cost effective

transportation energy system is available to Californians?

And thirdly, are there legal or regulatory barriers that are preventing the California motors from having reliable, adequate and cost effective energy? Those are issues that we will continue to wrestle with as we bring this report to finalization.

The staff is going to make a brief presentation summarizing the transportation report for all of us. There are a number of members of the public who have submitted blue cards, who will make presentations. I have six of them now. And so at the appropriate time we'll be calling on those folks right after the staff makes its presentation.

Following that more formal approach, I would just indicate that we'd like to have as much free flowing discussion as we can have on this subject because this is getting down to the last laps on this subject. And we need to really maximize what we hear from the stake holders and effected public in order to provide us the background we need.

Otherwise, you're stuck with our views

of the world, and we really would like to make it a broad-based view of the problems that we face. Anyone who wants to testify, I would remind you that there are blue cards available in the entryway out there. And if you fill one out, and provide it to the public advisor, or a member of our staff, it will find its way up here if you'd like to make a statement later in the day.

And last, but not least, since we are making a record of this, when you do get to the microphone, and please make all comments through a microphone, please state your name and your affiliation clearly for the benefit of our reporter here who has to translate all of this for us.

With that, I'd like to as Commissioner Keese if he'd like to say a few comments, and then Commissioner Geesman. And then we'll turn it over to the staff.

CHAIRMAN KEESE: Thank you, Jim. Just to welcome you all to this final phase, perhaps semi-final phase, because we are going to give you a chance to see our recommendations. And Commissioner Boyd will be going around the state to hear comments on it after we issue it.

But I emphasize one of Commissioner Boyd's points, and that is we would like to see the recommendations for California's Energy Policy be a consensus recommendation from governmental agencies, stake holders, and the Energy Commission, not just a California Energy Commission suggestion as to what the policy should be.

So as you comment, perhaps on the reports you see in front of you, which don't have the recommendations spelled out in them, and consider that we will be prioritizing and making recommendations. And we'd sure like to hear what you think recommendations should be and how you'd like to see us prioritize them. Thank you.

PRESIDING MEMBER BOYD: Thank you. Mr. Geesman.

CHAIRMAN GEESMAN: No, thank you, Commissioner.

PRESIDING MEMBER BOYD: Okay. With that, Mr. Mizutani, I turn it over to you.

MR. MIZUTANI: Yes. Thank you, Commissioner. Good morning. My name is Chuck Mizutani. I'm with the Energy Commission Staff in the transportation energy division. My

presentation basically will be summarizing the staff draft report entitled "transportation fuels, technologies, and infrastructure assessment."

SB1389 provided the legislative direction to the Energy Commission in coordination and cooperation with other state agencies, and the external stake holders, to identify emerging energy trends and potential adverse impacts. Secondly, to assess and recommend administrative and legislative actions to address those adverse impacts.

This report addresses those trends and issues in the transportation energy sector. The rest of my presentation will be a summary of the four areas listed on the screen, supply and demand trends. And then three major issues that we've identified in a report. The first one being fuel price volatility, the second, insufficient fuel supply. And lastly, reducing petroleum dependance.

And as far as the supply and demand, we did a forecast of on road transportation fuel demand, which was gasoline and diesel. The top blue line is that forecast over the next 20 years. Basically what you're seeing is the increase in

demand as a result of population growth and continued economic activity.

The bottom line, or black line, is the estimate of in state refining capacity, or production. The reason for the increase in that bottom line is from the historic trends of about .6 percent improvement in refining output as a result of technological and economic efficiencies.

But as you can see, with that, with respect to existing in state refining, there's a growing gap between supply and demand. As it turns out, demand will be about 35 percent higher in 20 years from current day demand levels. The first issue that is covered in the report is fuel price volatility.

Historically, we've experienced price spikes at the gas stations. And we will continue to susceptible to price spikes under these conditions. Currently, California's production is at near capacity. And through the years inventories will vary. And when inventories are low, and there's an unexpected supply disruption such as a refinery, outage, or import supply not being delivered on time, you get a supply shortage and a subsequent price spike.

In the legislature, in passing AB2076, directed the Energy Commission to address the price volatility. The study basically focused on fuel supply that was accessible and available.

As a result of this study, and the Commission adopting the following recommendations to address fuel price volatility, the first recommendation was that the Energy Commission will undertake a comprehensive evaluation of California's infrastructure needed to handle future petroleum product import in consultation with the following agencies: State Land Commission, Ports of Los Angeles and Long Beach, Coastal Commission, and the San Francisco Bay Conservation Development Commission.

The second recommendation was the Governor and legislature should identify a state licensing authority for responsibility for petroleum infrastructure facilities. The second issue is really a potential emerging issue. Basically the information that we have right now that sort of presents itself a question or a potential issue, is in terms of instant refining we get our oil supply from three major sources, Alaska, in-state California resources, and also

other foreign imports.

As you can tell, or see, from the graph, beginning in the mid '80s you see that California and Alaska production, or supplies, peaked, and that they continued to be declining. The shortfall has been made up increasingly from foreign resources. In 2002 the total supply of crude oil for in-state refining was over 660 million barrels.

Almost a third of that was coming from foreign crude oil sources. In terms of the in-state refining capacity, in the last three years we've been producing from about anywhere from 87 to 90 percent of the capacity of refining capabilities. That refining production basically has produced about 15 billion gallons of gasoline, and almost three billion gallons of diesel over the past three years.

With that, the industry has imported varying amounts of gasoline and diesel, anywhere from seven to 18 million barrels of gasoline in the last three years, over the last three years, and anywhere from seven to 17 million barrels of diesel fuel. The combination of in-state production and imports, that has been sufficient

to meet the demand for on road diesel and gasoline demand.

But as you can see from this chart, you'll see a continuing increase in demand for transportation fuels. Along with that, there are three other factors that will affect the future supply of gasoline and diesel, and those the Federal Oxygenate Standard, which requires oxygenates to be added to gasoline.

There's also a federal legislation in congress on the energy bill that has a renewable fuel standard requirement that would require states to have a certain percentage of renewable fuel, in this case it will probably be ethanol, in its gasoline. And the third area is a federal legislation that requires low sulphur diesel fuel standards to be promulgated in the states of the union.

California, through its Air Resources Board, recently adopted, or promulgated, a low sulphur diesel fuel standard. Those items, as well as the current situation in terms of our in-state refining and import supply situation has led to a proposed recommendation or options for the Committee and the Commission to consider.

The first one being that the Energy Commission should work with the transportation fuel industry to collect information on future expansion and construction plans for in-state refining capacity, implementation of crude oil, land stocks, and finish products to assess future supply adequacy, as well as constraints to expansion and construction that might adversely impact the delivery of future transportation fuel supplies.

In addition, we would recommend that California should continue to pursue a California waiver from the US EPA's option eight requirements. That we monitor the enactment and implementation of pending federal energy policy act legislation and its impact on California's transportation fuel price and supply.

And finally, that the Energy Commission monitor the progress of refineries to meet the CARB diesel fuel regulation, as well progress of other state's implementation efforts. Third area is reducing petroleum independence. In terms of California's need to reduce petroleum dependence, there are three reasons or factors.

One is our growing dependence on foreign

oil makes us vulnerable to the political situations in other regions of the world to be able to have a reliable and adequate supply of fuel. The second area is economic cost in that if rising gasoline and diesel prices will basically cut into a motorists budget, in terms of paying more for energy to be able to drive.

And then the other thing is with respect to the growing foreign oil, that payment for the transportation fuel basically will be exported to those countries that we get our fuels from. And the third area is environmental impacts. Basically, petroleum produces emissions, and in particular greenhouse gas emissions that have an impact in terms of worsening our global warming situation.

In the AB2076 petroleum dependence reduction study the Commission addressed the transition to a sustainable energy future. That study focused on efficiency improvements and fuel substitution options. Basically options that were non-petroleum in nature. From the analysis and public input the Commission adopted a reduction goal for gasoline and diesel demand.

And that goal was to reduce demand to 15

percent below 2003 levels by 2020, and maintain that beyond the 2020 timeframe. In developing and adopting that goal the Commission looked at a cost benefit evaluation methodology that estimated net benefits, which included impacts on consumers, the environment and energy security.

It assumed 100 percent market penetration for fuel efficiency options only. It also assumed a vast in technologies. It was not intended to be forecast, but rather a best case scenario to achieve maximum and sustainable petroleum fuel reductions with net benefits.

Identified efficiency and non-petroleum fuel options with a positive net societal benefit, and using those options that have the positive benefits, merit a built portfolio that provided the largest and sustainable reductions. This chart here is a summary of the options that the Commission looked at.

In this one it's the efficiency options, which included diesel light duty vehicles, various high efficiency heavy and medium duty vehicles, as well as vehicle maintenance increasing the government fleet fuel economy, fuel efficient replacement tires, and then various scenarios that

would increase the corporate average fuel economy for the California fleets.

One of the things to note in this chart is that basically all the efficiency options provide a net positive benefit. The second area was fuel substitution. And those options included bio diesel, Fischer-Tropsch diesel, natural gas, ethanol blends, fuel flexible vehicle, LPG, and several electrical vehicle options.

And finally, fuel cell options that included a methanol fuel cell, and also direct a hydrogen fuel cell. As you can see, some of the fuel substitution options provided a net positive benefit. Taking those options that provided benefits, and putting together sort of a portfolio, one could see how the various options could impact the demand for petroleum fuels.

And the graph or the line that is labeled one basically is the impact from implementing near term efficiency options. The line that's labeled two, basically includes Fischer-Tropsch diesel. And the line that is labeled number three provides the biggest reduction, which basically would meet the 15 percent below 2003 levels by 2020 by looking at a

40 mpg fuel economy.

And then the fourth line basically, in order maintain that level, one would have to begin to add non-petroleum fuels, about 20 percent of new vehicle sales between 2020 and 2030. Beyond 2030 you're looking at fuel cell vehicles. With the adoption of that policy report there are some activities that we believe are necessary.

And those two areas are analysis and RD&D. Basically what the Commission looked at was the feasibility of options that could meet that goal. But there's some activities in terms of being able to develop those options to be able to be implemented into the market place.

The second area is world oil. And right now our sources of foreign imports basically are really distributed worldwide. The bulk of the imports comes from the Middle East, in particular Iraq with 20 percent, and Saudi Arabia with 20 percent. But also there's Latin America in terms of Ecuador, Mexico and Argentina.

And other parts of the world in terms of South East Asia, Africa and Australia. So basically as we become more dependent upon foreign imports, the regions of the world that we will be

dependent upon basically will increase and will be more susceptible. So there's a need to be able to monitor in what's happening in the world of oil market.

With respect to reducing petroleum independence, the following recommendations are being proposed: The Governor and legislature should adopt the recommended statewide goal of reducing demand for on-road gasoline and diesel to 15 percent below the 2003 demand level by 2020, and maintain that level for foreseeable future.

Secondly, the Governor and legislator should work with the California delegation of other states to establish national fuel economy standards that double the fuel efficiency in new cars, light trucks and sport utility vehicles.

The Governor and legislature should establish a goal to increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020, and 30 percent by 2030. In addition to that, in terms implementation, we would recommend that the Energy Commission establish a working group of industry, environment and academic stake holders to develop specific strategies to support research develop and

demonstration consistent with the recommendation adopted under AB2076.

The Energy Commission should continue to analyze the strategies identified in the AB2076 report to improve its understanding of the constant effectiveness of new vehicle technologies, the value to the state of reduced environment damages, the impact of higher fuel efficiency on vehicle safety, consumer choice and driving patterns.

The Energy Commission staff should expand its analytical capability to evaluate the cost and benefits of fuel demand reduction options, including land use planning, concepts, public transportation and voluntary accelerated vehicle retirement.

Lastly, in the area of analysis in RD&D, the Energy Commission, through public private partnership collaboration, should pursue basic transportation energy research, hardware development and infrastructure deployment.

And the recommendation for the world oil area is that the Energy Commission should monitor world oil supply markets to provide as much advanced planning opportunity to respond to

significant changes in the world oil production.

Monitoring areas include production profiles, especially for countries that may be nearing their production peaks, reserves to production ratios, industry and related financial markets, global oil substitution and demand reducing trends, and OPEC market share trends.

And that concludes my summary presentation.

PRESIDING MEMBER BOYD: Thank you, Chuck. Do you any of the Commissioners or advisors have any questions they'd like to ask of staff now? Okay. I do have some questions, but I want to do a commercial right now, take a commercial break. There is or will be, or there is now, out in front of this building a hitech vehicle that some of you may be interested in seeing.

It's brought to us courtesy of a California group called CAL-Start, but it's a product of a company in Massachusetts called Selectra. It's a class 7 truck with Selectra's Corporation's proprietary hybrid drive system. It's a hybrid diesel electric truck that may be part of the technology in the future.

So any of you who are interested might want to slip and take a look at that. I'm interested, but I'm stuck up here. In any event, this is some of the technology that we so desperately need to have developed under R&D, and that our future may be dependent upon.

So anyone interested in taking a look at it, it's out there in front of the building. And I'm going to use that commercial as a segway to a question. It's not necessarily the first one I was going to ask originally, but I will because the question is about technology.

And, Chuck, you or any of the staff can respond to this. Just from my own personal view of reading this report multiple times, I'm a little concerned that perhaps we don't talk enough about technology and what role technology is going to play in the future of transportation. And the legislative charge to us does include the subject of technology.

And we kept it highly oriented towards fuels technology. But I would like to pursue more, the idea of including some discussion in the final report that the committee and the Commissioners have to produce, discussions of what

I'll technology, vehicle technology. But I want to broaden that to things like the kinds of efforts.

We've had presentations here in the past from the likes of ITS Davis. That's the Institute Transportation Studies. And from Cal-Start, but not from Profit Advanced Technology Organization. That is the sponsor of this vehicle out front. And I really think for the benefit of policy makers and the legislature, and the public we maybe should talk more about that.

And, Mr. Scheibel, I know the Air Resources Board can help us with that. And I would invite you to do just that. The other thing, and I know that the staff has a working group with all state agencies who have invested interested in transportation issues, and of course in prior meetings we've had presentations from the planning director of Cal-Start -- I mean Cal Trans, excuse me.

And I'm looking for us to maybe discuss more of the kinds of transportation thinking and planning over a long term that Cal Trans may be incorporating into their planning, because it will have an effect on transportation in total, and

thus the fuels for transportation, and things that constitute efficiencies and the movement of people bring us efficiencies in the use of fuel and help us see that we can stretch the use of this scarce commodity farther into the future, because the bridge to a different future, or the path, is a long one, as we've discussed before.

I don't know if you'd like to respond to that. It's not so much a question as a suggestion. Or maybe you can correct me by indicating that you're poised and ready to handle this issue.

MR. MIZUTANI: Yes. There's a number of work that the staff here at the Commission has done, can be incorporated into this report with respect to technology. And then in terms of Cal Trans, they are going through a process in terms of a transportation plan that we would be able to take advantage of in terms of incorporating that information into this report as we..

PRESIDING MEMBER BOYD: I think we need to show the bridges that are there, because the government needs to, as much as possible, speak with one voice. Another question, what about aviation fuel, or jet fuel? It's referenced in

the report, but it's not dismissed. It's just we reference it and is it a problem or isn't it a problem? Is it one of the policy issues we have to worry about or not?

MR. MIZUTANI: I think right now what we did with the resources and the time that we had, we tried to focus on the three top issues. And I think jet fuel, what we do know is that it's a fairly large demand for that fuel here in California. But for the most part I think it's imported. Jet fuel is imported. We're not necessarily aware that there's any issue kind of starting us in the face.

PRESIDING MEMBER BOYD: Well, I think we better a little more at that. I think we make jet fuel that's exported to other states. And I remind you of during the great energy electricity crisis of a couple years ago the airport in Las Vegas was starved for jet fuel because we couldn't get it there in a pipeline, etcetera, etcetera.

I don't want to close this report out without some commentary on it, either we need to look at it more or we're comfortable with it.

Commissioner Geesman?

COMMISSIONER GEESMAN: Well, Chuck, I'd

point out that on page nine where you go into the forecast, your forecast shows the biggest gain actually being in demand for jet fuel.

MR. MIZUTANI: Right.

COMMISSIONER GEESMAN: And I think to the extent that a common theme of the report and the hearings that we've held is that we do face some real infrastructure constraints that need to be addressed immediately. It seems to me the impact on jet fuel is pretty large, whether it's on the import side or the export side.

MR. MIZUTANI: Okay. What we can do though is take a look at jet fuel, that sector, in more detail and provide some information.

PRESIDING MEMBER BOYD: There are members of the petroleum industry in the audience who I'm sure would be very happy to help us with some of those, that information, some of those answers. As segwaying in what Commissioner Geesman raised, the question of infrastructure, my last category of questions.

In reading the report we talk about infrastructure heavily with regard to blending components and finished product. And in other parts there is reference to crude oil, but I tend

to infer from what I read today an extreme bias towards, or maybe an exclusive bias towards, blending components and finished product.

And I want to make sure that we give the subject of crude oil import, because we already import substantial amounts to our refineries just to meet that need. And I guess I need to ask, does the staff see that there's an infrastructure issue there as well as the well documented infrastructure issues that were raised in the context of the strategic fuel reserves studies, and so on and so forth.

MR. MIZUTANI: No. The bias wasn't intended. I think the point, at least in the second issue, is really we don't know what the industry will be needing in terms of importation. Is it crude, or if it's finished products, or blending stocks, or whatever it is, we don't know what that is.

And so the intent wasn't to exclude crude oil, but to sort of look at it import wise from a larger perspective.

PRESIDING MEMBER BOYD: Okay. And my last question is infrastructure oriented again, and it's almost a sub-sale last question. The

infrastructure again springing heavily from the strategic fuel reserve work that was done is heavily aimed at the marine infrastructure for import purposes, be it the docking, the pipelines, or the storage facilities, or adequate docking for the import of, let's say, petroleum in general.

And having just yesterday dispensed with the idea of a state sanction sponsor or otherwise product pipeline from let's say the Gulf. Nonetheless, I'm wondering if we mean to rule out the idea that infrastructure can include both crude oil and product land based pipelines from other places.

And maybe the petroleum industry can give us some input on that. But I think we do need to cover that. And I'm not saying that you meant to leave that out, but it's hard to pick it out.

MR. MIZUTANI: Right. We'll provide more information on pipelines.

PRESIDING MEMBER BOYD: Okay. With that, I'd like to now turn to some -- excuse me, Mr. Smith, a question.

MR. SMITH: I do have a couple of questions. And if you could clarify a phrase you

used in your presentation about outages. If I recall correctly that outages lead to price spikes. Is that necessarily the case that has been occurring with the volatility we've seen recently where Californian's are actually confronted with outages, cannot get gasoline or diesel, or is it the expectation of shortage?

MR. MATTHEWS: Am I on or not? Scott Matthews, Energy Commission. Average is a word probably unartfully applied here, because we think of electricity where in fact there are outages as opposed to the gasoline market where there's disruptions, things that we usually use in our reports.

And there are real shortages. There's less gasoline than there was. And so, therefore, demand supply working their magic, you know, demand stays the same, and supply goes down and the prices go up. The expectation of outages is sort what we've seen happening in Phoenix here where's a lot of all of sudden panic buying and people fear that they can't get gasoline.

And so all of a sudden you have a lot of that activity. People generally don't know that a petroleum -- you know, we all know we're close to

it, that a refinery went down or we had some other problem. They just see those prices go up and, you know, get mad about it, you know. Why in the heck are our prices doing that?

So I don't see, other than reading in the newspaper that prices might hit $2.25 next week or something. People are usually reacting to what they're seeing on the -- what the market is revealing to them on their price of gasoline.

MR. SMITH: Well, I appreciate the clarification. The word "outage" implies something I think maybe different than what was intended then. Secondly, and maybe there's not an answer to this question right now, but we certainly need to consider it in the report in the future, is there's a phrase that's used in the report efficient than sustainable transportation future?

And I'm just curious what efficient and sustainable means. What are we -- what efficiencies are we moving toward that don't now exist and so on? The phrase is used in the report. It's not really well understood in the report, what it is we're trying to achieve by that, or what we mean by that phrase, especially

with respect to the current system, or some interim system, or what the future system might be.

So there probably should be some explanatory text about what we mean by that. If we're going to use that as a goal, we need to explain to the read what that means, unless you have any response right now.

MR. MIZUTANI: We'll take that into consideration about a more explicit definition for that phrase.

MR. SMITH: Okay. And then lastly, with the recent events in Arizona with the pipeline, does that give us any concern about the reliability about our in-state pipelines and what actions or concerns should we be expressing regarding that issue?

MR. MATTHEWS: Gordon.

MR. SCHREMP: My name is Gordon Schremp. I'm the senior field specialist on staff here at the Energy Commission. Reliability of the pipeline system with regard to the Phoenix situation, yes, it is a 48-year-old pipeline that did have a failure, then a subsequent refailure of another section during the water test.

There are sections of the pipeline, both Kinter Morgan operates and other companies, some of them present here today, that have their own systems that are as old if not older. We understand that over the last ten to 20 years a number of stepped up safety and maintenance programs have been instilled by these companies to inspect their lines with a greater frequency, and with more sophisticated equipment to avoid any releases.

So, could something like that happen in California? Certainly, because of the age of the pipelines, and they're just in constant use. And more importantly, these importance of the pipelines with regard to dispensing prior throughout the state, they are extremely important to gain (indiscernible) to get in a timely and economical manner.

So, yes, we understand also that some of the companies have been looking at their capacity, and their limitations, and the methods that could be instilled to expand them, as well as build new pipelines. And we understand further Kinter Morgan has new pipeline under construction between Concord and Sacrament to replace an existing line

that goes through the Delta area to improve its efficiency, its rated capacity, and reduce the risk if released to the Delta sensitive environmental area.

PRESIDING MEMBER BOYD: Gordon, is that the line that we lost several months ago and caused us a local shortage situation, or is this a different line?

MR. SCHREMP: It's a different line.

PRESIDING MEMBER BOYD: Okay. So basically are you saying, Gordon, aged infrastructure is a problem? This is an analog to what happened back east last week.

MR. SCHREMP: I wouldn't characterize it as a problem. If we had multiple leaks occurring and multiple closures, yes, you could certainly characterize it as a problem. In fact, the statistics nationwide and in California for pipeline releases, both petroleum product and crude oil, show a downward trend in both the frequency of an intended release and the quantity of material released.

So there has been an overall improvement regardless of the increasing age of the infrastructure. So people seem to be doing a

better job at stewardship.

MR. SMITH: Are there any inspection routines, or requirements rather, that are imposed by the permits or by the federal government, or state government.

MR. SCHREMP: There are a number of different maintenance and safety inspection regimes required by both, the Department of Transportation and here in California State Fire Marshall Office of Pipeline Safety, as well as the individual companies and what their regard is an appropriate level of maintenance to detect potential deficiency in pipeline and correct it before a leak manifests, as well as make sure the pipeline operates continuously.

Because remember, especially for the common carriers, any down time is a loss of revenue. They only obtain revenue when the pipeline operates.

MR. SMITH: Thank you.

MR. SCHREMP: You're welcome.

PRESIDING MEMBER BOYD: Any other questions? Thanks, Gordon. Well, with that, I think we'll turn to people who have asked to testify. And as a courtesy to another state

agency I'll call first on Dr. Greg Greenwood, the science advisor of the Resources Agency.

MR. GREENWOOD: Good morning. I am Greg Greenwood, science advisor to Mary Nichols, resource secretary who as always is vitally interested in this topic, and charges me to pursue it in her behalf. I would like to make three comments on the report as I see it.

First of all, I'd like to note what I see as a real tension between the short-term and long-term goals within the project, specifically a tension between investing in existing petroleum infrastructure, while at the same time espousing a long-term goal of moving away from it.

I don't see these are irreconcilable, but there is clearly a tension between them. And how the Energy Commission deals with tension I think is an important topic to consider. I think the risk is over investing in technical solutions that we recognize to be unsustainable over the long-term.

That's the potential risk in this. And this is really not a yes/no question. It's really sort of a how much, or just when do we reach the tipping point. My suggestion here is really in

the realm of the economic analysis that's used to justify different kinds of investments and infrastructure that's going to last for a long period of time.

And in this realm I would just encourage the Commission to continue to pursue the path that it pursued with the Air Resources Board in the AB2076 report of using a full cost accounting approach to the continued use of petroleum. In particular, it's important to keep in there a cost related to greenhouse gas emissions, even if we do not have a convenient way of tapping that as a source of revenue.

It is a cost that's borne by the larger society and needs to be incorporated into this economic analysis. A second aspect of this I think is a use, or at least a continuing consideration of what might be other long-term average cost of fuel, it continues to strike me as I pay a $1.98 a gallon at the gas pump, we continue to use $1.68 in reports.

Now, I do understand the rationale behind that, but it may be a question of doing more sensitivity analysis on -- or incorporating more sensitivity analysis into ongoing economic

analysis. So we really get a clear idea of when we've reached the tipping point.

I haven't seen $1.68 in at least six to eight months I think at this point. And maybe I'll see it sometime in the near future. But somehow I'm not going to place too many bets on that. I think a second example of this long-term and short-term tension is on the short-term seeking a waiver on the use of oxygenates and having the long-term goal of increasing the use of compounds that are now going to be used as oxygenates.

Again, I don't say these are irreconcilable, but there needs to be some thought of the policy bridge that moves from a short-term waiver to a long-term increase. The second point has to do with considering a full range of transportation options. The report projects -- I'm counseled not to use inflammatory language, but I would like to say a whopping 41 percent increase in VMT by the year 2023.

I'm just very curious where we're going to put all those additional VMTs given the transportation infrastructure this state currently has. I mean we know there's going to be continued

growth in Southern California. We see growth hopping over the mountains into the high desert and into Southern Kern County.

We see continued growth in the Central Valley, and in all of those cases we have a lagging infrastructure transportation to deal with that level of VMT. It does seem to me that it's one of the unspoken premises of this report is that there will be continuing, and I would say probably massive increases in infrastructure spending related to transportation, related to highways.

And that just needs to be stated as an assumption and perhaps different scenarios related to that assumption considered. First of all, if it doesn't happen, if there is not that increase and, again, I presume it's a very large increase in infrastructure spending, the future projections really aren't plausible.

Meaning I have doubts, although I'm not a transportation planner, that we can squeeze 41 percent VMT onto the existing infrastructure. If we can't, what does that mean for the future projections? That's one point. If, on the other hand, there is some amount of forthcoming

investment in transportation infrastructure, it seems to me that that changes two things.

It changes the overall cost of our transportation choices of which energy cost is imbedded within that overall cost. And secondly, it provides a much greater range of options to consider. I mean if this state is a position to literally new cities in the high desert, or elsewhere in the state, we have some real opportunities to change the rate of growth of VMT in ways that are not what the people at Cal Trans like to call the demand management police strategy.

It's ways in which we can actually increase consumer choices and lower consumer cost. I'm not sure that those choices are really clearly sketched out in this transportation energy report. I think in this case that transportation energy use is really a product. It's a byproduct of location and lifestyle choices of California citizens.

And it is not implausible that policy ventures in the area of improvement of city schools and more vigorous pursuit of job house balance could not have an important impact on

California's transportation energy. Clearly these are areas with a lot of political difficulties. But frankly, I don't see choices here that don't have important political dimensions to them.

So my recommendation here I believe is one that Commissioner Boyd, and I guess I just want to second it, that there be a much -- that there be a formal and robust link between transportation and energy planning from here on out. That you work with Cal Trans and perhaps with housing and community development to better understand some of the real options that we're going to face in mid term in this state related to how we do infrastructure planning.

A second example of this need to reach across agency boundaries is perhaps a little risky for me to say since I really don't know that much about it. But I just want to point it out as a possible area of investigation. In AB2076 most of the analysis of bio fuels were based on the existing agricultural structure of the United States.

And we do not have an energy agriculture in this state. Is there possible that there could be one? And I really, as I say, have not studied

this in detail, but on one hand I read of 100 to 200,000 acres in the San Joaquin going out of production, agriculture production, because of drainage problems.

These are lands that could conceivably grow energy crops, biomass that could be used in other ways. But what it means is the energy sector, those concerned with the energy sector, have to develop a longer term, working relationship, with those in the agriculture sector to really scope out what the potentials are and what the public policy would be if we were to exploit those potentials.

My third and last point is one I believe some of you have heard before that in the interest of full disclosure I recommend that this report more fully discuss the market base interventions that have already been analyzed. I always wonder when I start sounding like an economist staff writer, but in fact that is the point I wish to make.

That market based interventions really do have a very large potential role to play, particularly market based solutions that show net benefits to consumers. And the AB2076 report did

highlight a few that did show net benefits to consumers. This report uses language, again, that notes that the staff dismissed these as basically politically impractical.

As a science advisor, I would like to see the data whereby staff conclude that this is politically impractical. I would like to bring your --

PRESIDING MEMBER BOYD: They're called battle scars, Greg.

MR. GREENWOOD: Yeah. Well, it may not be the staff that's making this call. But I just want to -- I think there's more room to move than we typically see out there. I draw your attention to the recent PPIC poll of Californians. And it's quite interesting in the press that got a play in which, you know, Californians think there's a big problem, but they're not part of it.

I'm not sure that's an accurate reading of that poll. Let me just read one short section here. "In many ways, California culture revolves around cars says , PPIC Statewide Survey Director Mark Baldassare. But the growing alarm about air pollution and health may lead some to break the cycle." Unquote.

Indeed, some residents appear willing to change their driving habits for the sake of the environment. 52 percent report that when it comes time to replace their current vehicle they would seriously consider buying or leasing a smaller vehicle to reduce fuel use and air pollution.

Incidently, the report goes on to say that there is a very strong political basis in this state to change CAFE, but I'm not -- and we are completely behind that strategy. So if you need that I can provide you the reference that shows the strength of that.

But one final point that they make, 81 percent of Californians support giving tax breaks to encourage consumers to purchase hybrid gas and electric vehicle. They probably didn't ask the public where that money was going to come from to provide that tax break. And that's why you get an 81 percent.

But nonetheless, I just want to point out that in this poll it indicates a considerable basis of support to investigate things that are market based interventions as outlined in the transportation energy report.

So with those three points I conclude my

comments. And thank you for your great work in this topic.

PRESIDING MEMBER BOYD: Thank you, Greg. Any comments or questions? Commissioner Geesman.

COMMISSIONER GEESMAN: I would thank you for your comments, and also indicate agreement with your assessment of the way the media interpreted the PPIC poll. I think if I recall correctly the very strong support for an increase in CAFE standards was shared by SUV owners as well, contrary to the stereotype that some have attempted to promote.

Where I take some exception with your comments, Greg, is that if you isolate the infrastructure discussion to the import facilities, we sometime call them marine infrastructure, but it includes storage facilities, pipelines, what have you.

The economic decision made as to whether to invest in more capacity or not are typically private sector corporate decisions. The responsibility of government, and in particular state government, although we haven't really done much in this area, is to assure a smooth and effective and efficient permitting process for

that.

And I think the primary impetus behind the infrastructure recommendations in the draft report is in response some pretty alarming information turned up by our consultants as to the dysfunctional nature of that current permitting process. I'm wary, very wary, that if we don't address this, which I think is one of our primary responsibilities, the public's tolerance for price volatility is likely to be quite short.

And to the extent that we do get engaged in prolonged period where the California price spikes up significantly above the national price, I think it tempts state government and other governments to do really stupid things, including things like our ability to retain a particular California chemical composition of gasoline.

I think if we don't address this, and address it with some real priority, there's a lot at risk because the public's tolerance for price volatility is not as great as a lot of economist would like to think it should be.

MR. GREENWOOD: I certainly would never have suggested that the report not address it. It's clearly at the heart of this issue to make

sure that Californians have a reliable supply. My point is simply to be able to track -- to not do things in the short-term that markedly slower transition to what we all agree will be a better solution in the future.

COMMISSIONER KEESE: Let me ask you, and I am perhaps staff to comment, you started out by suggesting that our ethanol waiver requests, determined ethanol waiver, is a short-term strategy where we have a long-term strategy of alternative fuels. My feeling was that the waiver strategy is a vulnerability issue.

That as we get to January 1st, and wind up with a single fuel in California that must have ethanol in it, we have created a situation of vulnerability that we need to get away from as a short-term strategy. And that can be consistent with the use of ethanol in California.

And that can be consistent with alternative fuels in the future. But I mean it's a short-term vulnerability strategy, which is not really opposed to a long-term strategy.

MR. GREENWOOD: Yeah. Again, I didn't mean to suggest that I think either one of those strategies is incorrect. It just seemed to be

that it would have been very good to see what the relationship is between the short-term action and the longer term action of moving towards that.

COMMISSIONER KEESE: It seems to me there's a recognition that, at least in the short-term, there will significant amounts of ethanol used here. If we get the waiver tomorrow we will still use at least at much, perhaps more, ethanol in our blend stock at this time.

But we're faced with is this acute vulnerability. We're putting our neck in a noose as of January 1st. We've got to get away from that.

MR. GREENWOOD: Yeah. Once again, I just want to reiterate that I'm not questioning the wisdom of the policies that are pronounced here. It would have been helpful for me as a reader of this to understand how one moves from one to the other, you know. I'm in no position to question it.

COMMISSIONER KEESE: I prefer to call it the oxygenate waiver and alternatives fuels in the future. And maybe that separates the two.

PRESIDING MEMBER BOYD: Greg, your comments about whopping VMT growth versus

infrastructure are of course right on. And academically you're correct that it seems that we can't squeeze any vehicles onto the highways. An observation that I would make, that Mr. Scheibel can probably appreciate this, for years and years there has been an assumption that the California public will become intolerant of congestion, which is what increased VMT and the increase of the population of vehicles keeps bringing us.

And that will put pressure on a resolution to the energy use air quality consequence mobility infrastructure dilemma. And yet it hasn't happened in my now very long career in government. The public seems to accommodate to this far better than many of us thought they could.

And by the same token, the nature of economy suddenly relieved that congestion for a while before it comes back. So you're right on, but I think we have no choice other than to project VMT along the lines that has traditionally grown, and hope that maybe the collision between VMT and, once again, the inability of people like the south coast district to achieve the air quality standards, the fact they're losing ground,

will perhaps focus people again on the issue of VMT mobility infrastructure and alternatives there too.

I have eternal optimism about that. I just don't know whether it will happen or not. But I note the south coast district of late calling for the State Air Board to do more with mobile sources, which I'm sure the industry thinks they've screwed down to virtually zero, and zero in some cases.

And I'm beginning to personally think the efforts to address transportation control measures, which were abandoned for political reasons many years ago, and a purely technology approach was taken, we're going to have to revisit that issue of looking at other than technological solutions.

But I don't know if the body politic is ready to deal with this. I only hope that they are, because technology is marvelous and I believe in it intensely. But it can only do so much in the face of the steady increase of population, vehicles, distance travel to and from work because of the spread of subdivision, etcetera, etcetera, and the point of land use, which you're right.

That needs to be dealt with. I only hope that we can come to grips with it. And maybe the collision of the energy air quality and congestion issues, once again, might inspire a new debate about some of those issues. But heretofore we've been unable to.

I'm afraid that same poll you made reference to somewhere in the body of that I remember reading that in spite of all the positive things people said, when it came to them personally being responsible for any of this, there was mass denial that they personally had a role in all this. It's somebody else. And that is a dilemma that we have to deal with.

MR. GREENWOOD A number of points. Maybe we'll need to billion of vehicle hours sat-in as opposed to miles traveled as the appropriate measure for the transportation system, or at least in parts of the state. Secondly, just to go to the poll, I think it matters in the short-term versus the long-term.

If you immediately try to crank down on people's choices as the way to deal with the problem, clearly there's a push back. But if they're over the longer term is an opportunity to

change the infrastructure, either the infrastructure of the state or the personal infrastructure investments I make in my own vehicles, people seem to be much more open to other choices at that level.

But to suddenly give me a 30 percent surcharge on what I used to do for a dollar yesterday, clearly, you know, the people were not really ready to do that. The reason I bring up the linkage with Cal Trans is number one I think it's a long-term linkage. That energy use is in fact a byproduct of a whole set of choice that Californians makes.

And that the scope, particularly as move into the future, if we're going to accommodate, if we're 35 million today and we expect to be 60 million by 2040, it's hard for me to see how we will not be building new cities. And at that point we'll have the opportunity, not to try to retrofit what appear to be bad decisions 50 years later, but to actually set up, you know, new human settlements in ways that are far more energy efficient than what we have now.

And that's really the opportunity we need to take. I mean if we are completely

convinced that could we get the technological solution, that is the one that has the order of magnitude larger impact. Nonetheless, as a bet hedging activity, we still need to think about the things yield two, three, five percent improvements.

And some of them could come from changes in how we accommodate population growth in the future. And that's an opportunity that we need to seize.

PRESIDING MEMBER BOYD: Thank you.

MR. GREENWOOD: Thank you.

PRESIDING MEMBER BOYD: To accommodate a time request, I'm going to next call on Kathryn Phillips. And then following that I'm going to call on Mr. Joe Sparano.

MS. PHILLIPS: Thanks for accommodating my schedule. I'm Kathryn Phillips with the Center for Efficiency and Renewable Technologies. We're a coalition of environmental organizations, renewable technology companies and other organizations that have an interest in energy efficiency in improving -- reducing our dependence on fossil fuels.

First I wanted to thank you for offering

us the opportunity to comment on this report. And a number of the things I was thinking when I was reading the report and thinking about them, Greg Greenwood has actually also said, so I'll make my comments very brief.

I just sort of wanted to echo the observation that there is this interesting tension between the short-term and the long-term responses. And I'm thinking that maybe some of that tension can be relieved a little bit if there was a little more thought given to how some of the long-term responses given, that is the demand reduction approaches could be looked at in ways that what can we do in the near term and include some of those in the near term responses.

Also, we recognize and applaud the effort to anticipate ways of making sure California doesn't end up having some sort of economic disaster, another energy crisis of a sort that we don't want to go through again except in the transportation sector. And recognize the need to look at the infrastructure and participate in figuring ways to make sure we don't have a crisis.

Having said that of course we want to make sure that we're always -- included in the

analysis there's consideration of the environmental cost and the environmental impacts in ways of mitigating that. And that's also considered when you're establishing what the cost and benefits are.

Another point that, Commissioner Boyd, you brought up earlier, and I'd like to expand on just a little bit, you mentioned possibly working with Cal Trans to look at some of their planning that they're engaged in. That makes me think too that there's an opportunity to do with other agencies what the CEC has done with the ARB in preparing the 2076 report.

And that's expanding the circle to some of the other agencies that are responsible, especially for engaged in some of the options that maybe didn't get as much analysis. And as this report mentions itself, that there was a limited analysis on some of these other options that include improving transit.

What could you get for transit? And while it's sort of understood that transit in California isn't growing at the rate that people would like to see, and isn't having an immediate short-term impact, that gives us a lot of hope

that transit can be a huge contributor to reducing petroleum demand.

There are a lot of factors involved there that maybe weren't possible to take into consideration in doing the 2076 report. A more focused discussion might be able to take into consideration. And I'm thinking especially of some of the success on a few routes that Los Angeles, the transit agency in Los Angeles, has been able to produce some significant increases in ridership.

They've actually been able to pry people out of their cars in the San Fernando Valley because they've set up some fast routes from the valley into downtown, likewise on Wilshire Boulevard. And they've also started instituting some of the other approaches that have been used in other parts of the world to make buses fast and make the wait shorter, etcetera.

So I'm thinking that perhaps maybe even if there was an attempt to do some sort of short-term look at what do we need in the state to ensure that the funds are available. What are some funding mechanisms that we're going to have to put in place to ensure that at the very least

transit operations aren't reduced.

And in the best case that we have the funds to increase them. One of the problems transit faces is the equipment is there and the funding is there for equipment, but when it comes to day-to-day operations, actually having the people to drive the buses, that's where the funding becomes a problem.

And there are probably some mechanisms out there that we haven't considered and that maybe it would be useful to put that on a list of short-term options to consider. In any case, ultimately our position is that we'd like to see a -- we applaud the 2076 report goals. We think there are actually more options than exist.

And certainly, we can probably do some -- agencies can do some additional analysis on some of the options that are included in the technical appendices to the 2076 to suggest that maybe we do have some more long-term and some more short-term opportunities to reduce to demand.

And I'm looking forward to tracking and helping as we progress on finding ways to make the demand side of this equation more successful. Again, thanks for the opportunity to speak. And I

think that's it. Thank you.

PRESIDING MEMBER BOYD: Thank you, Kathryn. I appreciate your comments. I think they're definitely on point. Funding of transit and use of transit has been long-term problems. Actually, many, many state agencies are part of the advisory group that works with us.

And in spite of the age of California government, the interesting reflection I have is how hard it is to get linkages established and make them permanent. And I think this integrated energy policy report has afforded us new opportunities. We've actually worked fairly closely with Cal Trans, but they're doing their own planning process, and we're trying to interface better with that.

Your reference to what I call bus rapid transit is extremely interesting. It's something I've personally favored for more than a decade now. But it's kind of hard to get our society interested in transit, vis a vis those populations in other countries of the world.

But anyway, thank you. Mr. Sparano.

MR. SPARANO: Good morning, Commissioners, advisors, ladies and gentlemen in

the audience. My name is Joe Sparano. I'm president of the Western State Petroleum Association, or WSPA. I appreciate this opportunity to continue sharing WSPA's views and concerns about the transportation energy section of the state's Integrated Energy Policy Report, or IEPR.

WSPA views the Energy Commissioner's program to develop a comprehensive energy plan for California to be an extremely important effort, and we appreciate the Commissioners' willingness to extend the deadline for comments to include today and beyond.

I have some formal comments. I have something I'd like to show the group. We've provided copies of this testimony for the record. I think it would be remiss and unfair for me not to observe, although both WSPA and myself don't necessary agree with all of the pieces of the various reports that have been done as part of the IEPR.

I think the staff of the Energy Commission has done a marvelous job, a great amount of work has been done in a relatively short period of time, and I commend you for that effort.

While I go through this formal testimony I'd just like to characterize the basic message at the beginning, and that is--

And I know this will be at odds with some of the other speakers you'll hear today, and perhaps even with your own perceptions. The one real message here is in order to accomplish what you're asked to do under 2076 isn't necessary to mandate the removal of demand, which I hope to share with you why that really means supply as well, of products that are recognized as perhaps some of the cleanest in the world made anywhere.

We have a supply. If we want to add to that supply to ensure that we can remove volatility, or at reduce it, as an issue in our population, and in our every day lives, then there's another way to go at this then simply artificially reducing demand for a certain product or set of products.

And I wish for you to consider that as you hear my remarks. And I'll be happy to dialogue that with you in the spirit of trying to provide information and, as you'll see later, some thoughts on how we might get there. So with that in mind, let me launch into the more formal

remarks.

We strongly support the conclusions of the Energy Commission's draft report on the feasibility of a strategic fuels reserve for California or SFT. These conclusions substantiate WSPA's position that government intervention in the petroleum marketplace will disrupt the market's response to fundamental supply and demand conditions.

Over many years, government intervention has consistently resulted in negative consequences in our free-market economy. Many of them certainly unintended, but most of them harmful to consumers and the economy. We should not repeat those policy mistakes, and the conclusions of the SFR report, in my opinion, should help to assure that we do not.

However, the joint Energy Commission and Air Resources report on the strategy to reduce petroleum dependency, SRPD, ignores, or seems to ignore, the cautionary wisdom contained in the SFT report. The SRPD report that was adopted by both agencies in July contains recommendations that will cause harmful consequences to consumers, industry and ultimately the State's economic

health.

And for the record, WSPA strongly opposes this policy initiative. We're particularly concerned with the creation of the unrealistic goal of a 15 percent reduction in petroleum products demand by 2020 versus the 2003 levels. This actually means that transportation fuels produced -- excuse me, transportation fuel products manufactured from investments made in California over many years will also be eliminated, thereby removing a substantial portion of existing clean fuel supplies from California's marketplace.

As I mentioned earlier, we don't think that's necessary. Having a goal that also stresses or forces technology is one thing. This plan may break it. If California somehow approaches this goal it will likely result in higher prices for consumers, loss of more jobs, when manufacturing facilities can no longer run at economic and attractive rates, and a severe disincentive for industry to invest further in California's economy.

And the first speaker identified that clearly as a potential disconnect between urging

investment infrastructure, and then having a plan that essentially removes many of the products that that infrastructure would support from the mix of supply.

If the state attempts to implement SRPD as part of the IEPR, the result could be higher fuel costs for all Californians. This is a concern. Here's some information that reinforces WSPA's observations and concerns about the recommendations contained in the draft IEPR.

Recently, on several occasions related to the state's efforts to get the US EPA to eliminate the federal oxygenate mandate or, as Commissioner Keese mentioned earlier, provide a waiver, Governor Davis as asserted, accurately I believe, that California refineries already produce the cleanest gasoline on the planet.

Is the Commission really prepared to send the Governor and the legislature an IEPR that includes a goal that will a 15 percent reduction in demand for, and in our opinion, therefore supply of, that cleanest burning gasoline? I do not understand the logic behind the goal when it's characterized that way.

WSPA believes that the recommended goal

of a 15 percent reduction in demand for petroleum products by 2020 versus 2003 demand will really result in a much larger reduction in petroleum products available to the public. Here's where I'd like to use the flip chart to try to illustrate the point.

And I'm going to use the current California gasoline demand, and the Energy Commission's own forecast of I believe it's a 2.6 percent per year future gasoline demand growth. And I think one of the earlier charts in the staff's presentation portrayed that.

So if you'll bear with me for just a moment, I'd like to try to do that. I think there's some power in actually laying this out. I really appreciate the Commissioners allowing me to do this. I know this is a bit unorthodox compared to what we usually do. But it is my hope that -- and I clicked this to somewhere.

I hope I can do this right. Yeah, I've got a pocket. Let me try to do this quickly. It's a basic visual, vertical access is demand. Okay. And million barrel today. Here we have time, the year 2003 out to the year 2020 on three million. Right now we sit around a million, a

million one barrels a day.

And with the forecast presented in the SFR report that's projected to go, and I probably didn't draw this all that well, to about 1.5 million. I know that's a little bit above the actual number. In the SFR -- excuse me, in the SRPD report there is a clear indication that the goal should be that we remove 15 percent of the demand, again, by the same year.

And that takes us down somewhere to about 935,000 barrels a day. This is 2.6 percent per year growth. There's no thing that I'm aware of that will stop that growth from occurring, particularly in the near term, and maybe even as we move further out. Part of your report articulates a desire to have the CAFE standards doubled.

And certainly that can make a significant impact on some of the demand. But at the end of this period, in 2020, this is a huge difference between what may be demanded still and what this would, if adopted by the legislatures, specifically require to be available in the marketplace.

And I think there's absolutely no need

to get into that. This is about a 50 plus percent gap. And I know we've talked about this, and I'm sure when I'm done I'll have some advice as to how this certainly can be drawn differently, but that's the basic premise.

There is no need to remove something that even our own top elected official has characterized as a perfectly clean product, and one that all of us know one heck of a lot of work and money has gone into over many years, billions of dollars in fact. So with that as a background, let me proceed.

It's clear that the SFR report recommends a streamline permitting system for adding infrastructure investments that will support more imported petroleum products. This is a good thing. At the same time, it's also clear that the recommendations of the SRPD report will result in the elimination of 15 to 50 percent of existing gasoline demand and, therefore, supplies.

This will create significant disincentives for future investment, including infrastructure. That to me is a significant contradiction that hopefully will be addressed. I don't think those goals are compatible. I don't

know if anyone does, I'd like to hear why.

And if anyone really wants to accomplish both those goals, as I think the reports would now suggest, the result will probably be an exchange of California jobs, tax base, revenues and economic well being to foreign countries or other US states. And I know that is clearly not your intention.

Here's some information that reinforces my point. According to a recently published US Census Bureau report, between 1995 and 2000 more than 1.4 million people move into this great state. But unfortunately another 2.2 million move out. All of that described as between states of the union.

That's a net loss of 800,000 people. And there are reasons for that, and I think all of us have read about them. More people are leaving or becoming jobless since 2000. There is information that since 2001, January, this state has lost 300,000 more manufacturing jobs.

I don't think that it was ever the Energy Commission's intention to recommend policies that are going to reduce manufacturing investments and further erode this higher paying

jobs segment of our economy, which will reduce our tax base and further damage an already weak economy that, as some have observed, is the fifth largest in the world.

Like the Energy Commission, WSPA supports cross defective fuel efficiency measures for transportation vehicles and fuels. We also support production of unsubsidized alternative fuels as evidenced by the participation of our member companies in a development of hydrogen fuel cell program such as the California fuel cell partnership.

Many types of future fuels will likely be developed provided there is customer demand. If consumers want mass produced alternative fuel vehicles, they'll demand them for the auto makers. And like petroleum companies have done, the auto makers will invest to create the supply that meets that demand.

Let the market work. I urge you, let the free-market work. The government should not dictate vehicle choices or standards that free-market consumers don't want. There's also a direct relationship between the continuing reduction and total US crude production, and

petroleum products manufactured, and the anti-market policies of some state and federal government that prevent investments in safe environmentally sound facilities for the production and transportation of additional crude oil, and the construction of additional refining capacity.

This had created an increasing need for foreign imports. We think a better balance is needed. Considering all this information, here's some specific recommendations the WSPA would like the Energy Commission to incorporate in the final IEPR. First, the IEPR should not force a reduction in petroleum products demand.

Instead, its recommendations should add to existing clean burning transportation and fuel supplies by maintaining and helping grow additional clean petroleum products through expanded California refining capacity, and upgraded facilities for imported products.

Also, existing clean burning petroleum product supplies should be augmented by facilitating the cost-effective, unsubsidized development of various renewable fuels. And the IEPR should ensure that adequate export facilities

for products such as petroleum coke are maintained.

Now, I don't think that is addressed in the existing reports. But I do know that the Energy Commission testified in Los Angeles. There's a specific example of this, so I don't (indiscernible) in a vacuum about my comment.

There are so many things in our industry that can effect supply. And, for example, seemingly removal of one of two coke export facilities in the City of Los Angeles would set the entire state up to have one way to remove the bottom product from many of our refineries, particularly because we run heavy California and other crudes that produce petroleum coke.

If that one export terminal was to be effected in anyway so that it could not operate, the consequences would not simply be that coke production would sit on the ground. The consequences would be that the refineries would slow down and eventually stop making that other product that we all think more highly of than petroleum coke, and that's gasoline.

So I want to make sure that linkage remains. Supply is a big issue. It can be

effected in many ways. The second recommendation we have is that the Energy Commission should recommend to the Governor and legislature that the state develop a state mandated licensing authority for the permitting of petroleum infrastructure and manufacturing facilities.

This authority would be responsible for expediting decisions on permits for projects that would increase the supplies of transportation energy products available for California drivers. A one stop operation that continues California's environmental improvements and does not backslide, is an analogous to the electricity permitting effort undertaken in recent years by the Energy Commission would be the objective.

The third and last recommendation is that conjunction with the previous two, WSPA recommends that the Energy Commission form a blue ribbon panel that incudes representatives from state agencies, the petroleum industry, environmental groups, one or more economist, and the public interest group Reason Public Policy Institute.

This panel would examine the impacts of unintended consequences, a possible IEPR

recommendation. The examination I mentioned should include an independent detailed review of the probable cost and cost effectiveness of each recommendation, identification of transportation fuel product supply constraints.

And creation of a plan for eliminating them, a quantitative analysis of the real environment impact of various policy recommendations, and an assessment of the overall impact of these policy recommendations on components of California's economy, including jobs, tax revenues, investments, and market volatility.

In case you're not persuaded by WSPA's observations and recommendations, I'd like to just cover a few additional comments from the independent group I mentioned, Reason Public Institute, and from David Montgomery, a noted economist with Charles Rivers Associates.

I believe these comments were contained in documents that were previously submitted to the Energy Commission, and that they reinforce the views I've shared with you today. Quoting from the Reason Group, "We have grave concerns over the SRPD report assumptions about the nature of the

problems, problems are in need of policy solutions. The assumptions of the cost-benefit analysis and the recommended solution themselves."

And the second one, "Overall, the report suffers from an errant definition of the problems that need to be solved, and claims benefits for its recommended policies that would not actually materialize. Indeed, implementing the report's recommendation would cause net harm to California citizens."

I realize I'm excerpting here, but I know in fact that these comments have been submitted, and I urge you to consider them seriously, as I hope you will ours when you look forward and wrap up your work on IEPR. Secondly, the quotes from David Montgomery on the same SRPD report.

"There are a number of problems with the underlying cost-benefit analysis. When problematic assumptions are removed from the cost-benefit analysis, it is far from clear that there is any economic rationale for the petroleum reduction or non-petroleum fuels goals.

Moreover, there are more cost-effective options for addressing all the problems cited,

none of which were considered in the report." As an example, he says, "Just letting the market work is an unexamined option."

Finally, another quote from Mr. Montgomery, "The solution to gasoline supply problems and price volatility can only be found by allowing adequate refining capacity to be built, and by rationalizing fuel regulations so that the market is not balkanized by boutique fuel requirements."

In closing, I want to emphasize our industry's core message. Reasonable energy cost and a supportive political atmosphere for business growth and manufacturing investments are what will drive California's future economic success. Our state does need an integrated market-based approach to its transportation energy future, not a government driven mandated and subsidized recipe for perhaps unintended consequences and higher consumer costs.

Let the free market work, monitor it's progress, eliminate the barriers to its success. All of us can get solidly behind an approach that incorporates those factors. Again, don't mandate removal of existing clean supply. Let's add to

it, and we can certainly work together to accomplish that.

I want to thank you for giving me this opportunity to present our views, and would be happy to answer any questions you might have.

PRESIDING MEMBER BOYD: Thank you. Any questions?

COMMISSIONER KEESE: Joe, I'm not 100 percent familiar with the SPR. I did not work on that report. However, I did look at page ten where they essentially have the same graph you have. And the recommendation, as I recall, is based on the adoption of higher CAFE standards in Washington, which would not take place immediately.

So just looking it here, it looks to me like they project continued growth on the same line that you have, the 2.6 of refinery production, through 2007 or '08 at the earliest.

MR. SPARANO: I think that was -- I don't mean to be argumentative, but it looked to me like the earlier chart that I think you had up there, projected your demand growth as CEC's 2.6 percent projection of product demand growth, and then the lower curve was a projection of

refineries ability to meet that based on existing facilities.

COMMISSIONER KEESE: Right.

MR. SPARANO: So it does leave a big gap, Commissioner. And one of the reason is, let me try to address that, because I think you're making an important point.

COMMISSIONER KEESE: You know, when would CAFE standards have an impact for the need for petroleum fuel?

MR. SPARANO: If you look at recently discussed senate and energy bills on the federal level, I believe the earliest date, and I think it was defeated as part of the bill that may come up again in committee and get added, the notion of doubling CAFE standards to 40 miles per gallon was in the proposed bill that was not contained in the bill that left, I think it was the house.

And it targeted the year 2015, which is why I expressed some concern about demand building up through a period when we have a means to at least address it.

COMMISSIONER KEESE: Right. And I believe in the staff projections here, they assumed, even if the standard was adopted today,

it wouldn't take effect for a number of years. So their projection was that production refining would have to continue to rise at the level to meet that 2.6 through 2007 and 2008.

It would continue to rise slightly less through 2012. And only after that would there be some levelizing. So even if the CAFE standards were adopted federally, the short-term in the next ten years would result in virtually identical continued development of refining in California.

It's slightly different than we see of the suggestion that we're going to eliminate jobs tomorrow. I mean the report suggest expansion for the next seven or eight years, slightly less expansion for the next two, and then some tapering off in production.

MR. SPARANO: And that result, and the major point I try to make for you today, and I've tried before to make, is that we don't feel it's necessary to remove over whatever period of time you want to identify 15 percent of a perfectly good supply of products that are clean.

That meet all the requirements that have been asked of the industry, and in some cases more, as part of this energy plan, which will

become policy and then law, which is contradictory to having another portion of the same plan that says, industry, we'd like you to invest a bunch of money, and others who are private investors or whomever in infrastructure that will allow the other component that is key to keeping our supply adequate, and that's imports.

Those two are contradictory, and I'm seeking a way to try to get the Commission to focus on and recognize, and hopefully support the fact that the 15 percent mandated reduction and demand is not needed, whether it's in the first seven years or the total 17 years.

COMMISSIONER KEESE: But you also indicated you support better fuel efficiency for the automobile fleet, which is I guess -- so you're not necessarily suggesting we should adopt a goal of 2.6 percent increase in refinery capacity for the next 20 years.

MR. SPARANO: No, I'm not. That isn't what you're adopted. I still don't agree with the way you characterize the line. So maybe I'm missing something.

COMMISSIONER KEESE: But if there's an inconsistency on our side, if the industry

supports better fuel efficiency in automobiles, there will be a tapering off of that growth pattern.

MR. SPARANO: There may also be, and I am not smart enough to predict it, additional people who desire to move in here, and who drive, and vehicle miles driven that off-set that efficiency. And that's okay. We've never argued against efficiency to the best of my knowledge. I know I haven't.

And the prospect of having more efficient automobiles, new technology that provides it, is okay. Let's just do it without subsidies, keep the playing field level, and allow a good portion of demand and supply that exist today to continue. That's the basic theme and message.

COMMISSIONER KEESE: Okay. Thank you.

MR. SPARANO: Thank you for the question.

PRESIDING MEMBER BOYD: Joe, just a couple of comments. I appreciate your input and I'd like to start off positively by saying two of your three recommendations are more or less reflected in the staff's recommendations to us.

Maybe not quite the same thrust. Well, basically the same thrust, maybe not quite the same point.

So I think we do agree on permitting definitely, almost word for word, on the idea of having a blue ribbon group. I think the staff has recommended at least two different working groups to address different problems. And I see no reason why the industry shouldn't be on both of them. Perhaps that was an oversight on one of them.

Maybe the issues to be debated need to be defined by the folks who can get together. With reference to the materials that we did receive from David Montgomery and from the Reason group, and I would just point out to you that I spent several hours with the representative of the Reason group hearing their point of view on where the Commission recommendations were going.

And so I know very clearly their views of things. I may not agree with them. But they didn't agree with us either. Mr. Montgomery's submission, which you've echoed here, I have two concerns about, and I don't want to protract this today. There are people who have time constraints I want to get to.

But one, allowing adequate refining capacity to be built. We've had this exchange in the past. My point, from where I sit and from 25, 30 years of dealing with things that deal with transportation fuel, the system we have today is about as taut as it's ever been.

I mean for the past two years we've had price volatility that have caused government investigations and what have you. And with every passing week now we have trouble keeping our refineries going, something breaks. They're working very hard. Pipelines rupture. So we just have volatility today.

We're straining to meet today's demand. And having been burned as we were by the electricity situation in this state, political people are very sensitized to that situation and promises of what the market can bring us. So adequate refining capacity, I'm sure within the context of these working groups we'll have that debate.

It's just that we haven't seen, other than refinery creep, we haven't seen any expansions of refining in California for decades it seems like. And know of no plans to expand

refineries. And went invited to present plans for at least the last two, three, four years, have received none.

So within the context of our mutual working group, we need to have that discussion. The other comment that bothered me from Mr. Montgomery was not be balkanized by a boutique fuel requirements. You sang the praises and echoed the Governor's sentiment about our clean fuel, and promise to bring us more.

It is a boutique fuel. And I don't think this state ever intends to go back on its desire for clean burning fuel. And I would predict the world would move in that direction eventually. So balkanization will be broken down. And I don't know if that's an extremely big hurdle for us to have to worry about.

And lastly, the virtues of the free market -- well, not lastly, one, I don't know anybody on this Commission wants to negatively impact the California economy. I think many of us see that as the way to fuel revenue streams that will pay for a lot of the good things we want to do some day.

And we, therefore, don't want the

negative impact jobs. And lastly, you point out examples of negative consequences of government interference in the market, and the wisdom of this Commission maybe in two instances now to not have the government interfere in the market, neither with a government sanction sponsor paid for pipeline, or strategic fuels reserve.

I could, in another setting, maybe over a good cold beer, list a long list of positive government interventions in the market. I mean you run risks. You can be right. You can be wrong. But there have been a lot of positive interventions in the market done by this state.

I don't think we'd have the clean fuel that you harold today without government threats, if I might, an intervention with regard to that blankity blank alcohol fuel that the president of the former oil company made reference to when he said, okay, we can clean up gasoline.

I don't think we'd have the automobile technology we have today if there wasn't a lot of government prodding. And with regard to technology to CAFE standards and so on and so forth, that's a difference of opinion. We will just differ. And I don't know that any of that

changes the end result of where we're going.

But the one thing we're open to is having, you know, a dialogue on the issue. I think we've established somewhat of a portfolio approach to solving problem in this state with regard to its transportation fuel future.

And an approach that has been recognized in the electricity arena as the way we better go this time around as we try to repair that almost sunken ship. If we change course in the future with regard to the goals we set out now, that's a product of effective dialogue and understanding of what the market does.

But the market is highly unpredictable. I don't think you would have predicted, or we would have predicted, what's happening today. Dr. Greenwood's concerns about $1.68 a gallon as the price we use for projections, none of us envisioned where we're sitting today. And we don't know we're going to sit.

And none of us envisioned $4 and $5 natural gas either at this point in time. So it's really hard for us mutually to predict the market. So we had better take a, we think, some of us think, a multi faceted portfolio approach to

solving our problems in the future.

And we better be open and have a willingness to change them. And I think the IEPR process, which is continuous, provides us a forum to do exchanges of information that may well change the plans in the future. But for now, we've staked out a target that we think its just dialogue going, and may bring us some solutions. We differ.

MR. SPARANO: Okay. And I certainly respect and appreciate your opinions and observations, Commissioner Boyd. There's one area I'd like to comment on if I might. And that is when we look at today's volatility, which becomes more a greater, or not so great, concern to all of us as activities take place in the marketplace, and we see the results of those activities, I have to observe, and we've talked about this before, the permit processes in California has made it very difficult for any of the people that you've observed, you've asked to come forward with plans, to do so with the kind of clear conscience on behalf of their shareholders that they can present plans that they feel any certainty whatsoever may have approval, or get approval, within a four or

five year period.

I applaud what you have done in your efforts on SFR, you and Commissioner Geesman, in the way you've managed that process where you have insightfully viewed that as a key component. But it isn't just a key component of future success. It is a reason why today we haven't had refineries built, why you don't see incremental capacity come in as opposed to creep.

It is a real world problem that we, who manage the assets and revenues of companies, and I guess I no longer do that, but the members that I represent do, and hold their shareholder responsibility dear. It's very difficult to engage in that system knowing full well that there may be 100 different things that can catch you, and 100 different ways to protest even successful resolution of an EIR has made it very difficult to make progress here.

And I think that has contributed volatility. And, again, I applaud what you've done and what you have recommended to try to get us out of that particular problem area.

PRESIDING MEMBER BOYD: Thank you.

MR. SPARANO: Thank you.

PRESIDING MEMBER BOYD: Mr. Corkodel, and he will be followed by Martin Bourke, if that I pronounce that right. Both have indicated timing constraints and would like to address the group.

MR. CORKODEL: First of all, I'd like to thank the committee for letting me have this opportunity to speak a little bit about Fischer-Tropsch and alternatives for supply Fischer-Tropsch to California. A couple of days ago our president, Dennis Yakobson, gave his presentation in front of the Alternative Diesel Fuel Symposium held over at the California EPA Offices.

And at that time, it was suggested that this might also be a good topic to talk to this committee about to show some new alternatives, or some different approaches to supplying a product that the studies have shown to be beneficial to California supply.

Over the next couple of minutes I want to go through, you know, a couple of quick points, a little bit of technology primer, very quick. Talking about some viable FTD solutions, looking at California's options in particular a little bit, as well as a clear plan of one alternative

where we can go from here.

Rentech is a company out of Denver, Colorado that was formed in 1981, specifically with the idea of developing and improving the Fischer-Tropsch technology. Our strengths really have evolved around two things, developing a slurry bubble column technology in concert with a special iron catalyst developed.

Rentech are only about two companies in the world that uses iron catalyst versus a cobalt catalyst, which gives a little more flexibility for other products besides natural gas. Rentech has traded on the American Exchanges RTK. This is a very brief diagram of the technology process for Fisher-Tropsch.

This is the process that's been referenced in many of the reports 2076 and other reports regarding dependency of reducing your dependency on petroleum. You'll notice that the feedstock here is referenced as natural gas. This goes into a synthesis generation out of which comes carbon monoxide and hydrogen that goes into the Fischer-Tropsch catalytic process from which we can make several different types of hydrocarbons.

The most one of interest to this group seems to be the Fisher-Tropsch diesel. But you'll notice at the top there's also power generated along with the synthesis gas, and the Fischer-Tropsch synthesis that comes along with the process.

What we'd like to suggest is consideration that there are many other hydrocarbons that can by used as initial feedstock in a Fischer-Tropsch process, coal refinery bottom, orimulsion, which is a unique product in Venezuela, other heavy oils, biomass RDF are opportunities for hydrocarbon feed to the synthesis gas process.

We also note that using iron catalyst you have the capability to capture and sequester CO2, SOX and other harmful environmental streams. So this is also very environmentally beneficial look at this process. One clear note, because the process of Fischer-Tropsch uses carbon monoxide and hydrogen, all basically FTD quality is not dependent on whether the feedstock is natural gas or coal.

It's possible to develop the same quality products regardless of the actual

feedstock. Today's Fischer-Tropsch production is basically all overseas, predominately from Sosol in South Africa, using feedstock of coal, moss gas and a relatively new operation with natural gas, and Shell's Facility in Malaysia.

And those notice about 80 percent of the world's capacity today is based on coal feedstock. Rentech, because of the catalyst we use and the technology we use, is very actively involved in both the natural gas and the solid feed for our operations. Down in Bolivia we're working on a project based on stranded gas where gas is not able to be brought to market through normal pipeline or local use needs.

We're working down in Indonesia on what we call a methane complex, whereby we're producing multiple products, including FT diesel, as well as ammonia and some other hydrocarbons. We're also looking at different flared gas opportunities, both off shore and on shore.

I don't know if you're familiar, but in Nigeria, Algeria and Russia they flare more gas than quite a few states consume during the course of any given day. So it's a major environmental issue we're trying to help solve. And then one of

the other areas is the IGCC option for power generation by hanging a FT facility on that same process.

We actually have helped improve the thermal efficiency and the flexibility of that facility, as well as producing a very clean product. Supply in California, we look at the different alternatives for feedstocks for the front end of an FTD process. Natural gas is obviously the number one option you've studies.

But 350 million BTUs or, you know, it's closer to $5 in MCF, that starts your product off at a fairly high price. Looking at other alternatives, such as coal refinery bottoms, they're all well under million BTUs. That goes a long ways to covering the extra capital cost for producing FTD from those sources.

We also believe that long-term things like refuse derived fuels, biomass and other sources like that could be viable alternatives. But there's some concern as to what the real cost for collecting and sourcing those materials will be long-term.

We talk about volatility. Well, here's a just quick graph from January 1990 through 2002

on natural gas prices. And by comparison, I've shown a chart for the western coal price from the DOE from that same period. In fact, I used to work with a prior large oil company who did some marketing of coal at Powder River Basin back in January of 1980.

We were selling coal for roughly $6 a ton. And as of last year that same coal was being sold somewhere between $4 and $5 a ton. So the price of coal is very stable and consistent. Just out of curiosity I threw the extra graph on here to show the volatility of diesel. Now, diesel is not connected to natural gas, but it is connected to the general energy cost of petroleum and associated products.

And you see that diesel prices are very volatile as well. So the question is, why not coal for FTD? It's the world's largest source of energy. And the US has got one of the largest reserves of coal in the world. If you did the rough calculation, one that we would never actually see come true, but just to put it in perspective, the 275 billion tons of coal reserves is equal to over 20 trillion gallons of Fischer-Tropsch's diesel.

Coal is inexpensive. It's got great price stability. And it's one of the few products that is sold on long-term contracts. We're talking, you know, five, ten, 15, as long as 20 year contracts available to be able to add stability to the price of the feedstock.

New power plants are being built or are being planned to be built using new technology such as gasification. This comes up as two different issues for us. One, our ability to add an FTD plant along with a normal gasification is one option, or the ability to supply power to supplant the need for some of those plants from a pure grassroots FTD facility.

Another item of interest that is consistent with what this committee is looking at is the availability of hydrogen. The gasification process does produce hydrogen, which we do selectively extract for our hydrogenation process, but can also be extracted in larger quantities to supply hydrogen for other uses, fuel cells and hydrogen, you know, power vehicles, whatever comes up over time.

And then looking at this from an environmental perspective, carbon dioxide is not

only easily extracted and can be sequestered, but carbon dioxide must be extracted before the process of completing the FTD development, because it's a harmful part of -- it's harmful to the catalyst.

So we have to extract all the carbon dioxide in a concentrated form. So what's this mean? Let's talk about it from an environmental perspective. Using some information from Chevron, Texaco, and some calculations that we've done in-house. We've put together a chart that shows the relative CO2s produced per pound of the equivalent kilowatt hour just to keep on a same/same basis for several different technologies.

A natural gas combined cycle power plant, a natural gas Fischer-Tropsch plant. We see that because of the carbon being collected as product and not going out the back end, between those two the Fisher-Tropsch plant is much, much lower on a CO2 emissions basis. Conventional pulverized coal, obviously very high.

One of the reasons why this is going away. But IGCC plant with Fischer-Tropsch, or a Fischer-Tropsch plant with sequestration

(indiscernible) the actual emissions of CO2 to well below even the natural gas combined cycle plant.

What we'd like to show here is that even with the Fischer-Tropsch facility and coal, sequestration with an IGCC is possible such emissions go well below even the natural gas at Fischer-Tropsch plant. The other question that comes up is the cost and availability of Fischer-Tropsch diesel.

This the chart we've put together trying to calculate the price required from FOB for diesel product to get a 15 percent return on investment on a 10,000 barrel a day, 450,000 gallon a day, facility. We've drawn two separate lines, one for solids, coal and coke, and one for natural gas.

The capital cost for a solids project using gasification is probably 25 to 35 percent more than the capital investment for a natural gas facility, which is using steamly forming or something to that effect. But the lower feedstock cost, as show on the X access, can offset those higher capital cost and still provide a very cost effective manner of generating FT diesel.

In fact, the arrow on the left, red arrow on the left, shows that at 50 cents a million you can produce FT diesel on an FOB basis significantly below the zone that we have seen in the past year or so for current carb diesel pricing.

If you'd look at the 350 line over on the far right, which is where natural gas was, a little bit longer though than we do today, you'll notice that even with the natural gas FTD facility the price of diesel is a $1.50. Feedstocks in the Middle East are supposedly trading for 75 cents a million BTUs around that area.

So if you look at the natural gas you can see that that product FOB is still could be available from the gutters below the carb curve carb pricing. But by the time you transported the 12,000 miles to market using product carriers rather than crude carriers, there's some question as to whether or not it will be competitive.

And hence, several of the report comments about being ten to 15 percent -- ten to 15 cents higher than current carb diesel prices. So where do we go from here? Well, I think we've talked and we've heard enough about California's

needs and challenges. They're pretty straightforward.

You're looking at both of the hopeful reduction in dependency on foreign petroleum sources. You're looking at improved air emissions. And you're looking for some stability in your pricing. From an FTD provider's prospective we need something to be able to move projects forward an expeditious manner.

One, is reliable source of feedstock, because it's obvious from that graph feedstock is critical to being able to produce a competitive product. Long-term product sales contract is required by financing people to put this known and proven technology, but not known and proven in the US technology, into reality.

And, you know, we see the requirement to grow from, you know, roughly 10,000 barrels a day, 354,000 gallons a day type growth onwards in a steady manner without disrupting existing markets. We don't think that -- we are not advocating that FTD is a replacement technology or replacement source, but is one more piece of the total puzzle that needs to fit within the existing petroleum industry, and works within it to help improve and

provide those quality products that we talked about from California.

So what we see is a very viable next step to prove this technology, and prove this is a viable alternative for California supply is to build a next generation FTD plant source on low cost Wyoming coal, coal which is right now selling for $5 or $6 a ton, which translates to 30 or 40 cents a million BTUs.

You know, sources such that it's designed for a minimum size with lots of expansion over the long-term. Even at 350,000 gallons a day, however, that's, you know, well less than four percent of California's diesel demand and doesn't disrupt anything, and can be fit in very nicely over the next four to five years.

We think that we can secure easily a long-term coal supply agreement at 50 cent a million BTUs or less, making the product very competitive. And we also feel that we can optimize the production from this facility to include any extra needs for possibly upwards of one to 200 megawatts of power, if that's possible, or of need considering the transportation issues, or the transmission issues for electric power.

We can also look at how much in putting the CO2 into sequestration, which is an interesting subject because DOE recently completed some studies in the San Juan Basin that shows sequestration as CO2 into coal seems actually helps improve enhanced coal methane recovery.

And facilities of this size, we think could potentially, based on that information, help enhance an additional several billion cubic feet of natural gas out of existing resources every year. And we see that we need to make sure that expedite the construction to meet the near-term current needs of FTD for California at current carb diesel prices.

So what's our approach? Well, there's obviously a public private partnership required to move this forward, trying to help all parties meet their needs and challenges. Government support mechanisms are always helpful. I don't want to read this as money because that's not what really it's all about.

Yes, it would help with funding, is always helpful. But we need some mechanism and some support to make sure that FTD in the marketplace is there besides just a report that

says, hey, FTD is a viable alternative. We need to help poll that product out in the marketplace.

Obviously, we don't want to see FTD have any kind of tax nonparity with other alternative fuels to help it move into the marketplace better. And of course Dayton and local government can help support the FTD use by using it within their own agencies and leading by example.

Other key issues is putting together a strong consortium of companies that are interested in moving this technology forward, and they have to be obviously strong financially as well as technically. We would need to supply a long -- secure a long-term agreement for both feedstock supply and off-takes.

We need to make sure that we have a mechanism by which to get this product out into the marketplace knowing that a lot of it is a retail oriented market, not just a consumer or commercial market. And we obviously need to obtain the sufficient financial support such that we can move this project forward quickly.

There's a long list of potential stakeholders that could all benefit from FTD moving forward. And so what we see really in our

next step is putting together a very detailed feasibility plan by which we can bring the appropriate people amongst these stakeholders together, including the local and state government from California, and representing, you know, all of the environmental, as well as the energy and financial views required to make sure their project really does stand on its own and makes a lot of sense, and we get buy-in from all these different parties.

So in summary, I think that the reports that California has produced has already indicated that FTD is good and it's one good solid part of the future supply, energy supply equation. FTD, we believe, is available as a viable low cost alternative providing we use the coal as a domestic source.

Technology is there. The feedstock prices are there. And there's plenty of reserves to support long-term supply. Public private support is needed to move forward. We've talked about long-term contracts and financial commitment. But most important, Rentech and our other producers, technology companies available, to get this going forward today.

Thank you very much.

PRESIDING MEMBER BOYD: Thank you. Any questions? Thank you very much for your presentation. Now, if I'm saying this right, Martin Bourke. It looks like we didn't meet his morning time constraint. Sorry about that.

Mike Eaves.

MR. EAVES: It looks like we still are good morning.

PRESIDING MEMBER BOYD: Made it to the end of the wire.

MR. EAVES: I appreciate this opportunity. My name is Mike Eaves. I'm the president of the California Natural Gas Vehicle Coalition. And I represent the natural gas vehicle industry in California that is commercializing both C&G and L&G.

But my comments today can be applied to other stand alone alternative fuels of the futures, such as hydrogen, propane, and any others that have to have a separate stand alone infrastructure, other than gasoline or diesel.

I believe the report does a good job in reflecting the Energy Commission's role in the R&D activities both in the obviously in the vehicle

technology and in the infrastructure development. But I'd like to offer that there may be another potential role that is missing here that the Commission could take a lead on, and that is monitoring the same way that the Commission proposes to monitor the worldwide oil production and reserves.

In that regard, I think that there's a role for the Energy Commission to monitor the worldwide implementation of all the fuels, other places in the world. And the reason is there are substantial efforts worldwide that really dwarfed California's efforts to implement alternative fuels.

Places like German, Argentina. Brazil, South East are really moving forward in some of the grassroots areas of expanding alternative fuels. And I think there's a lot of lessons that potentially that California can take advantage of. So we're proposing that, you know, monitoring these programs, and looking at what's good and bad about those in their different cultures and different economic scenarios, I think can shed light on how California could and should proceed with developing alternative fuels.

In terms of natural gas vehicles, the fuel is available, and it's literally feet from where a potential application is. But until one identifies who makes the investment in connecting that gas supply to the vehicle application, that's the problem.

In the Commission's reports, they look at doing the cost benefit analysis. They look at the market penetrations in the ten percent area, ten percent penetrations and look at those economics. I assure you that the problem isn't moving from ten percent, to 15, to 20 to 100 percent.

The problem is getting the first 100th of a percent penetration, tenth of a percent penetration, half a percent penetration where natural gas is right now of California liquid fuels, you know, up into that one percent. So when you start looking at the cost benefit analysis, the implementation takes place at a total different cost in economics than if you can project, you know, a ten percent level.

So that's why I think that looking at these other programs around the world, and look what other governments and other industries are

doing to bring those fuels forward and everything, I think that's a potentially valuable role for the Commission to look at, and to take that worldwide experience and massage that into a scenario that's good for California.

Because we do see that infrastructure has to come first. If we knew of a cost effective fuel and infrastructure for hydrogen today, and we had cost effective hydrogen fuel cell vehicles today, the vehicle folks will be looking at the fuel folks and saying, well, where's the stations?

And you're going to have to play out that scenario that agonizing slow growth over time to get the confidence that the market is going to be there, the fuel is going to be there. The manufacture is going to expand the number of vehicles. We're in the same dilemma that the fuel cell vehicle folks will be in in ten years.

And I think there's some value of looking at our experience on natural gas, and the other worldwide experiences to potentially craft what is the real solution for California in alternative fuels. Thank you.

PRESIDING MEMBER BOYD: Thank you, Mike.

COMMISSIONER KEESE: You're suggesting

that we should look -- are you willing to point us somewhere? I heard a presentation two days ago at a Department of Energy event, and it dealt with actually the Phoenix Airport, and the expansion of the Phoenix Airport. And in order to get the air credits for the expanded landings, they installed a natural gas fueling facility and converted all their fleets of buses, taxi cabs and others to natural gas.

So symbiotically, I guess they achieved the air credits, established an infrastructure of reasonably good size at the airport, and converted the fleet. I mean is that what you're talking about?

MR. EAVES: Well, that's partly what I'm talking about.

COMMISSIONER KEESE: Can somebody give us something that says here's how that works, or worked?

MR. EAVES: I think that, Commissioner Boyd, you and I both attended the Sylmar conference several weeks ago in Monterey. And they talked about the desire when we get the fuel cell vehicles that we do mass introduction of fuel cell vehicles, and that we don't do it in each

markets as alternative fuels have been done to date, you know, in the United States.

We've done transit. We've done refuge. We've done school bus fleets. Your example in Phoenix is an example of how you go in and your start, and you build that infrastructure, and you do it based on the air quality credits. And you do the vehicles and provide the fuel.

But if you look at the total Phoenix area and what that is versus Phoenix total fuel supply, you know, it's rather minuscule. And it will take years to get, you know, the growth significantly beyond that. And what I'm saying is there are other places in the world, such as Brazil, Brazil had a -- or Argentina had a few hundred thousand vehicles a few years ago, now just over a million vehicles and a rather robust fueling infrastructure of close to 550 stations.

So I think there are different models evolving around the world, and I think you have to take a look at each of those. And I don't mean to say that you can't look domestically at what's happening in places like Phoenix. You can also look very strongly in Southern California and some other developments that are going on there.

COMMISSIONER KEESE: I guess I'm looking at the fact that we're going to be -- we're in stage last of this process for this year. We will be amending the IEPR and revising it in two years. We'll be issuing our recommendations within a matter of weeks. I'm not sure that we're going to be able to go to Brazil.

MR. EAVES: I'm not suggesting that. What I'm saying is I think that there's a recommendation in there, the same way you monitor petroleum on a world scale, on a move forward basis. That you monitor those programs to try to glean the best of those programs.

PRESIDING MEMBER BOYD: I think your point is a good one, and the staff is stretching itself to do the best it can. This is a terrible time in this state to talk about resources and recourse needs, to analyze, to monitor, to study, etcetera, but we do what we can.

I think your point is a good one and it can be recognized in a report that we need to do that. But that reminds me that we need to partner more than we ever have before I guess, with organizations like yours, like other state agencies, like other government agencies, like

academic institutions, etcetera, with industry and any other stake holders in order to accomplish some of this monitoring analysis and what have you.

So, as Chairman Keese said, we need to have you help point us in certain directions. And we look forward to that. And I think your point about don't leave these fuels out in any reference for public consumption of what kind of things we need to track is a good one. I appreciate it. Next is Mike Horner. And following Mike will be Steve Howell.

MR. HORNER: Thank you, Commissioners, Mr. Chairman. Let me see if I can figure out how to work this presentation here. Bear with me for a minute. I intend to make a presentation today on Canada's oil sands and how it can play a role as a secure source of supply to the California refining marketplace here. If we can find the presentation, hopefully I can go through it.

MR. HORNER: My name is Mike Horner. I'm vice president of new business with Terasen Pipelines from Calgary, Canada. I intend to give you a brief introduction to who Terasen is, an overview of the oil sands, a bit of a review or

overview of the markets for Canadian crudes, and what some of the options to supply the California marketplace are.

It's a nice technology. Unfortunately, it doesn't have my name on there. Here's a listing of all the different presentations that seem to be here.

PRESIDING MEMBER BOYD: Things have gone so well our technology expert slipped away.

MR. TOMASHEFSKY: Your name doesn't have to be on there actually. You might want to push some of the other ones that doesn't have your name, and you might actually find it there. They have to punch your name in there.

PRESIDING MEMBER BOYD: And if all else fails, we do have a hard copy of your slide presentation. The other option is we can ask for another witness who doesn't need the power point while people try to figure out the system for you. So you have an advantage. So, Mr. Howell, were you dependent also on hitech, or can we jump to you while a bevy of engineers tries to figure out how to make the system work?

MR. HOWELL: I'm an engineer too, but I'm not going to try to do the power points.

Thank you. My name is Steve Howell. I serve as the technical director for the National Bio Diesel Board, which is the trade association for the bio diesel industry representing feedstock groups, which provide fats and oils for bodies of production technology companies interested in selling technology and building plants, as well as the companies that actually produce industry, a wide variety of some of the Fortune 500 Companies in the United States, including Shell, ADM, Proctor & Gamble and others.

First I want to thank the staff of both the SEC and Carb for the phenomenal amount of work that was put into this report, and the phenomenal amount of information that they had to call and put together for this. I think it's an excellent piece of work. Obviously, with any piece of work like that there might be a few details that are missed.

We believe there are some of those related to bodies, which I'll cover just briefly. And then I'd like to spend the rest of the time with you today providing some additional information for you, and for the Committee, and the citizens of California on bio diesel, and some

recommendations as you moved forward to implement this policy from our point of view.

Scott Hughes is our regulatory director. Apologies for him not being able to be here today. He's actually having his first child and just got back from the hospital. Mom and baby are both doing well. He provided written comments.

PRESIDING MEMBER BOYD: I'm glad you mentioned mom there. I was hoping he didn't have the child.

(Laughter.)

MR. HOWELL: Yeah. It wasn't Scott that actually had the baby. It was his wife. We're not that far in the midwest yet, but you never know. He did provide written comments. I will not go over those in detail. Those are available for public record. A couple of quick things regarded to that.

There's a substantial amount and bio cell of data on bio diesel emissions, which confirm that the use of bio diesel in existing engines provides reduction in particulate matter, carbon monoxide, unburned hydrocarbons and air toxic emissions. We usually see a slight increase in knots, perhaps a little more, a little bit less

depending on the technology.

The data used in the report does not reflect that substantial information. In fact, the detailed information, quite back in the report, indicates increases in all those emissions from the bio cell used. That does not agree with the body of data. We brought that to staff's attention rather late in the process, and it was too late to incorporate some of that new data.

And so as we move forward incorporating some of that additional data in working with staff on that is something that we'd recommend for the Commissioners to take a look at. In addition, as you look at the economics, bio cell is a more expensive fuel. However, there are a lot of other economic benefits that bio diesel can bring to the table that were purposely not considered in this report.

Some of the macro benefits in terms of increased agriculture benefits from increased farmer products pricing that bio diesel has adopted, some of the benefits of increased manufacturing sectors and new production plants, and new jobs in the US, rather than importing additional crude. We're purposely excluded from

the economics of the report.

We're finding as we look at bio diesel across the country that those macro economic benefits are very important as you consider public policy. And many other states, and even our federal government, have taken those into account and have utilized that to look at the overall cost of bio diesel and cost of implementation.

And we recommend as you move forward that you look at those types of impacts and you put more emphasis on that than what was able to be put, on purpose of course in this particular report. A couple other quick updates regarding the energy bill, it was mentioned a couple of things on the energy bill and a low sulphur, which will impact the analysis.

In the latest energy bill that just passed the senate, the house passed a version earlier, bio diesel is included in that package. And there is an incentive in that package, which will allow B20 or lower blends to be very cost competitive petroleum based diesel fuel.

We anticipate that will pass. And we anticipate that that will drive some of the economics for bio diesel as it's looked forward.

Those impacts, of course, were not considered in the report. They're very new, right off the press.

But as you look forward in considering options for California, those economic benefits and incentives, which will be put in place on a national basis, will obviously have an impact on the acceptance and the amount of bio diesel used in California as well as around the country.

Regarding the low sulphur rule for conventional diesel fuel, I think as you know, and most of our audience will know, very soon it will be required to go from 500 parts per million down to 15 parts per million sulphur and conventional diesel fuel. When refiners and petroleum companies remove that sulphur you also remove the components which bring lubricity to the fuel.

Some sort of lubricity additive or component will need to be added in pretty much all future 15 part per million sulphur diesel fuel. Bio diesel, as a fuel component, already is less than 15 part per million sulphur, and can add that lubricity to the fuel mixture in levels as low as two percent.

In fact, testing done by the Standard

Automotive Company, one of the leading independent manufactures of fuel injection equipment has said in testimony to EPA as part of that ruling that two percent bio diesel incorporated into any diesel fuel, even future S15 type diesel fuel will be sufficient to increase lubricity to a point where it will address the concern from the fuel injection of engine manufacturing industry.

We believe that that technical benefit from bio diesel, along with other incentives being considered, will really allow us to look at incorporating two percent bio diesel into the entire US diesel motor pool as it occurs over time. That, we think, is the driving force for bio diesel usage, especially in lower blends from that technical standpoint.

In addition, the only real emission that we don't address in unmodified engines when bio diesel is put into those engines, are NOx emissions. In general we see a small NOx increase around the two percent level if you use a B20 blend with conventional engines unmodified.

The new diesel technologies that will be implemented with 15 parts per million sulphur diesel fuel will allow a 90 percent reduction in

NOx emissions, and a 90 percent reduction in particulate emissions. We believe that bio diesel is already a low sulphur component, and has a lubricity enhancer and a (indiscernible) enhancer will help to implement those technologies, will allow either bio diesel fuel engines or diesel fuel engines with 15 part per million level diesel fuel.

Will help to enable that technology to provide a 90 percent decrease in NOx and particulate emissions. So as we look forward in the future, I think that's an important attribute to take into account when we look at the environmental benefits in future diesel engines on future fuel. In addition to that, there's a growing level of evidence that there are areas of the country that may not be dependent on NOx for ground level ozone control.

Certainly the ozone report, the weekend ozone report, coming out shows that there are areas of the country that may not be dependent on NOx. So although we have programs in place to address NOx, there may be immediate applications where the small NOx increase we see with bio diesel usually would not negatively impact ground

level ozone.

And the particulate reduction in hydrocarbon reduction and carbon monoxide reduction, and air toxic reductions we do bring to the table could be very important. Certainly we've seen that as a driver for the consumer market. We have users who are actually using bio diesel. Currently in California, I think we have some gentlemen who will speak more about that.

So I won't go over that in detail. And that's some additional data that I wanted to make sure that the Commission had as you look forward to implementing your policies. I was able to look at the questions that were posted on the website, specifically some of those. And I have some answers for some those and how bodies can help implement those.

I'll go through those real briefly and then I'll polish off with the recommendations that we have for the Commission. Regarding demand and how the oil industry could meet the increasing demand for petroleum products over the next ten years, reading through the charts it looks like over the next -- between now and the year 2010 there's a 1.9 percent increase in demand slated

for conventional diesel fuel.

If we added two percent bio diesel to that mixture we could totally supply that 1.9 percent increase scheduled for diesel demand in California. For hydrogen fuel cells, and hydrogen fuel sources, diesel is an excellent source of hydrogen for fuel cells. Bio diesel already contains no sulphur, so it has the impact of not adversely affecting fuel cell catalyst and reformed technologies.

It's a very simple straight chained molecule, and it's actually easier for many reformer catalyst to convert into hydrogen than the mixture of hydrocarb compounds that are found in diesel and gasoline. So bio diesel can also be a potential viable source for hydrogen for fuel cell applications.

Bio diesel also has an extremely high flash point and extremely safe fuel. It's flash point is above 250 degrees fahrenheit for the pure bio diesel. It's a very, very safe fuel. So as we look at potential home applications and other issues associated with safety and flash point, bio diesel can bring that to the table as we look at the future.

From a flexible fuel area and CAFE credit area, bio diesel is used in conventional diesel engines. So you don't need to have a different technology to use bio diesel and diesel engine. Are there things that could be encouraged that bio diesel to that? We believe, yes.

We believe that there could be some sort of credit put into place for actual bio diesel use in vehicles that inflexible fuel vehicles, similar to the Energy Policy Act requirements right now on a national basis, which give you a credit equivalent to purchasing an alternative fuel vehicle for every 450 gallons of pure bio diesel that are used in the vehicle.

Lastly, in the distributed generation area, bio diesel is a surrogate for conventional fuel. It can be blend or used neat. Anywhere where diesel fuel is used to generate electricity, gas turbines, electrical gim sets, other distributed applications, fuel cells, bio diesel is a potential option.

And no sulphur, no aromatic clean burning renewable domestically fuel produced option. Lastly, recommendations that we would have is the national bodies of work for the

Commission. It's first to set up a bio diesel working group as one of the working groups so you can move forward, to provide better in some of the latest information as you go forth and implement your policy.

To integrate both local developments happening here in California, as well as developments happening in a national scale, which may impact California. It's a very growing market at this point in time. It's just a business in its infancy, and it's very difficult for even us in the business to keep track of all the developments in bio diesel.

So I think it would be very useful some bio diesel experts working with staff in a working group fashion. Also that working group could look at other innovative uses for bio diesel, which may be outside the transportation sector, and outside what the report actually considered. Bio diesel is some excellent fuel for boiler applications, and excellent fuel for electricity generation, fuel cells.

So there may other unique applications, which could fit into reducing petroleum dependance, which may be slightly outside the

scope, which are very closely related to transportation fuel issues. And then lastly, that working group's function would be also to correct any incorrections that are contained in the current report.

We would recommend that you expand economic analysis to include the extra analogies associated with bio diesel, the macro economic benefits. Certainly our country as a whole is looking at that. And today there are over 85 different bills in 33 different states, which are looking at bio diesel legislation to provide incentives for bio diesel production distribution and use.

So are there other legislative areas that are needed to help? Yes, there definitely are. In fact, in some public opinion polls that were done as part of the Energy Bill in front of congress, they interviewed over 1,000 different individuals across the country looking at whether the country as whole would find it useful to provide incentives for the use of bio diesel and school bus applications.

School buses are extremely important for emissions. And what that public opinion poll

provided was that 85 percent of those interviewed said that they would support for bio diesel use in school bus applications. It's a high number. But the polling organization wasn't so interested in the high number.

The part they were interested in was that that number held for every single demographic that they track, whether it was poor, rich, young, old, Black, White, Hispanic, on social security, coming out of college. Across the board there was support for bio diesel use for school buses.

They very rarely see that. And that's something that I think, you know, this group obviously, as you go forth with public policy, you know, that those opinions are very important. Lastly, it was stated upon earlier by one of our earlier speakers to investigate additional sources, potential oil sources, for bodies of production here in California.

You have a significant resource here in California for oils and fats, which could be used to produce bio diesel, cotton seed oil, animal fats, used cooking oils, all produced here in California. And in fact, most of the oil, the vegetable oils and animal fats produced in the US

today are byproducts of some of the process.

Soy beans, when we produce soy bean oil, 80 percent of the soy bean is high protein meal, 20 percent is the oil that's kind of left over. For animal fats, most of the animal goes into edible meat production, and the byproducts is fat. For used cooking oils, that's a potential resource that's out there, a growing and viable for bio diesel.

And all of these industries have worked over time to decrease the amount of oil because it's a byproduct. For viable public policies, all of these industries could find ways to actually increase the amount of oil produced, which in the past they've been desensitized to do. And since other options could be looked at to increase that resource even more.

Lastly, I'd like to end with a quote that just came out of the papers from a representative at a conference in Singapore. The quote said, "If producers managed the technical issues of bio diesel consumers will be able to enjoy the same level of confidence that they have with traditional fossil fuels, and we will reap the benefits from this clean burning natural and

renewable energy source."

That quote came from Lionel Clark who's a representative of the Shell Oil Company, who's also involved in Fischer-Tropsch. Shell also is a member of the body support, and very interested in bio diesel. So we have interest in both the petroleum industry, the oil chemical industry, and the farming industry, and a wide variety of people that are actively promoting bio diesel.

I think that's also important as you consider whether or not the options that you consider today are really going to be implemented, and what type of support is going to be behind them.

With that, I'll close my comments. I thank the Commission for its time. I congratulate the staff on the good job that they've done, and we look forward to working with you as an industry to help make renewable fuels, help make petroleum independence and cleaner air in California a reality. Thank you.

PRESIDING MEMBER BOYD: Thank you, Mr. Howell. That was a very good presentation. Any questions? Thank you very much.

Mr. Horner, I see you're back on screen.

After Mr. Horner we'll hear from Mr. Randall von Wedel.

MR. HORNER: Thank you. Just looking at my title page I see I omitted the words as a secure supply source from the cover page. But that's one of the points I want to make as I go forward. And mindful of the time, and how busy your morning has been, I'll try to move along fairly quickly.

PRESIDING MEMBER BOYD: We intend to go until somebody drops, so don't worry.

MR. HORNER: Hopefully it's not me. Terasen Inc. is the holding company that owns a number of different Terasen assets, Terasen Inc. from Vancouver, Canada. They have a natural gas distribution company, Terasen Gas and Terasen Gas Vancouver Island. They're one of the largest natural gas distribution companies in Canada.

We've got about 800,000 customers in British Columbia. We have an energy and utility services group, and in that group on the lower right you see energy that's now E fuels. And we're in fact one of the co-investors of the natural gas fueling facility that was built in Phoenix.

And we're also investors in a number of these captive L&G transportation fleets like at airports and waste haulers. But I'm with Terasen Pipelines, and we have the liquid pipeline arm of the Terasen group companies. We have three pipelines shown on this map, and hopefully it's not too busy to see.

Unfortunately, I don't have a pointer. But the green pipeline that runs from the top most pipeline on the map there, those are recently constructed corridor pipeline, not transports bitumen that's produced on the new oil sands mine from Shell and their partners up in the Athabasca region to Edmonton, which is where the main hubs for transmission pipelines from Canada originate.

The blue and red pipeline is our express pipeline system that runs from an area called Hardisty, which is connected to the Edmonton hub down into Montana and Wyoming, and then down into the Wood River Market area. And the orange or yellow pipeline, that's the Trans Mountain Pipeline that runs from Edmonton to the West Coast.

We supply a refined product from Edmonton, as well as crude oils to the local

refinery in Bernaby and have a connection down into the major refineries in Washington State. We also have an export terminal from there. We do expert about 10,000 barrels a day of crude oil from Alberta down into California.

Commissioner Boyd, I understand that you've been to the oil sands and you've seen the size of the developments up there. The oil sands have proven resources on the order of magnitude of Saudi Arabia. There's significant production currently from the oil sands. There's now about a million barrels a day of production from that area, but a resource, recoverable resource base.

If we look at the forecast for production of oil from Canada, the blue and the red are the contribution from the oil sands. And you can see typically the conventional crude oils are declining, forecast to decline over time. But you can see from the chart from 2003 up to about 2015 a substantial increase of production from the oil sands in Canada.

There are a number of risks that could affect whether all that production is materialized or not. If we look at the risks, stakeholder support in Alberta is very strong. We work with a

number of first nations up in that area. Alberta is generally very supported economic developments.

Regulatory approvals in Alberta are timely. If we look at commodity prices are strong, operating costs are being managed and coming down. The two risks that have been problematic have been capital costs. These facilities are very expensive, you know, five to eight billion dollars Canadian. That's, you know, a lot of money.

And the other issue that's been problematic is Canada's implementation of the Kyoto Accord, and a number of projects have been stalled as a result of that. However, I understand that there's going to be more certainty given to some of the new developers in giving some holidays as to when they have to meet the Kyoto reductions.

This is a bit of a busy slide. I apologize for that. But if you look at the markets for Canadian crude, the blue circled markets, those are the conventional markets, the Trans Mountain system in Vancouver and Washington State. The Canadian systems refineries typically in Edmonton and in the Sarnia Area, the Salt Lake

City, Utah, and Rocky Mountain Refining Complex, and the Chicago Refining Complex are generally the traditional markets.

Canada currently exports about a million barrels a day of crude oils into the United States. We're number two or three, depending on the production from Venezuela behind Saudi Arabia. If we look at the potential markets, that's where the real interest from the potential oil sands producers is coming from.

The Holy Grail I suppose you could say is the US Gulf Coast, just a tremendous refining complex there, nearly eight million barrels a day of crude, gone over a million barrels a day of heavies. And the second most interesting and perspective market is the California market, almost two million barrels a day of crudes and about half a million barrels a day of heavies.

And obviously the forecast for domestic crude production and Alaska crude production shows that there is a great opportunity for more foreign crudes to participate in this marketplace here, a significant growth opportunity over time. If we look at the summary, increased production of Canadian oil sands and heavy oils, the existing

markets are virtually saturated.

The Chicago market area is where most of the Canadian heavies go. We don't expect to see new cokers and other conversion into those markets. A need to find new markets, the California market being an excellent potential market. A lot of heavy crude conversion capability here.

And the declining local and Alaska supplies looks like a very good market for Canadian crudes. The competitive -- or I guess the market issues in general for crude oil is a competitive market. The producers of crude oils look at the net, the amount of money they receive at their production gate is really a net back of what you can sell it for in the marketplace, less the transportation cost to their gate.

The opportunities to sell crude oils, supply crude oils into California, will be based on whether the producers think that they can realize greater net backs selling to California versus the Gulf Coast. And also it's a function of the refinery purchasing power.

Given that most of the -- well, all of California domestic crude is captive in the

marketplace here, the refiners have strong market power, and are not necessarily going to step up and pay the relative pricing that they would in the gulf coast. Shipper commitment for new infrastructure is very important.

We heard about that in the case of Fischer-Tropsch. Producers are loathed to go into a development market without some kind of an understanding that they'll be able to sell into that marketplace. Pipelines won't be built unless there's some long-term commitments to support them.

We believe that it will take about 300,000 barrels a day of production into the California marketplace to support any new infrastructure necessary to bring that oil sands product into the marketplace. And we see some of that will happen as has happened in the gulf coast where producers and refiners have gone together on infrastructure.

The Venezuelans and Mexicans have built a lot of coking capacity in the gulf coast. We're starting to see some Canadian operations integrating themselves with US based refiners. Sun Corp. bought a refinery from Conoco in Denver,

and those are signs of that. And that's the sort of thing that will need to take place to support the kind of long-term commitments to come into the California marketplace.

Another issue is port capacity for water borne crudes. You know, as you see the need to bring in more crude oil from offshore, and the availability of terminaling facilities, there's a real disconnect between the ability to cite new tankage and the demands for competing uses such as containers.

Then the regulatory climate, permitting, particularly if there's a land base option, which I'm going to address in a moment. Permitting is a potentially significant issue for pipelines in the state. There's really three options to supply oil sands, crude oil into California. The top bar across the top, that's a project that Enbridge, which is the major oil pipeline transmission company in Canada, is looking at.

They call that their gateway project. The middle line is additional capacity on the Trans Mountain system that we have. Both of those would bring crude oil to tide water, and then down into Southern California. And finally the third

one is a land based option running from Hardisty all the way to California.

What we are looking at as Terasen, we're looking at an expansion of the Trans Mountain system. We have a couple of stages of expansion that could give us about 50,000 barrels a day of additional heavy oil capacity quite quickly. But we do see that the Washington State refiners are looking at taking more of this Canadian heavy as well.

So that might not materialize as crude oils come into California. We're looking at a land base root, a new 24 inch pipeline from Hardisty all the way to California. We think there's some significant benefits to a land base pipeline. Again, the Enbridge Gateway, which would see large volumes of crude oil and a new port on the west coast of British Columbia, capable of loading VLCCs, they would see crude oil come into California, as well as to offshore markets in Asia.

The land base supply option, you know, obviously there's a number of issues with respect to water borne cargos, particularly of the volumes that will be needed in the future, the tankage and

the port congestion. An interesting one is just in time deliveries. Refiners like to keep their inventories low. And if they're able to get deliveries off a pipeline, they can reduce their crude carrying cost.

And finally, security of supply, Canada is a strong partner with the United States. And as our Prime Minister Chretien leaves office at the end of the year it will become a more secure partner for supply to the United States. But a land base pipeline would essentially be locked into this marketplace.

So would probably reduce some of the volatility and pricing and would provide even more security of supplies than water borne crudes would, even from Canada. So in summary, you know, I think the oil sands can play a major role in supplying US markets, and a contribution to the California demand.

The issues that we face is as a pipeline company, or an enabler of this scenario is getting commitments to under-pin the necessary infrastructure, and timing of the oil sands projects. These are big projects. They need to come together on a timely basis to be able to

support in volume wise the capacity necessary to build.

If the pipeline is built, and there's a ramp up through puts, the initial cost of operating the pipeline will tend to drive those through puts away. And then finally, the regulatory climate, particularly for land base pipeline, but even for additional tankage in ports, needs to be supportive, need to understand and provide signals that that type of investment is welcomed, and seen as necessary over the long-term.

So that concludes my presentation.

PRESIDING MEMBER BOYD: Thank you very much. As you indicated, yes, I have had the privilege as a guest of the Canadian government, have seen oil sands operations, and they're impressive. And I didn't broach them in my initial comments to the staff knowing you were going to make a presentation on them.

But it does appear that US has finally acknowledged the existence of Canadian oil sands. And I think we need to take into account that as a potential supply. I know there's still an ongoing debate about what agencies in this country are

willing to acknowledge as the potential up there versus what you folks feel the potential is.

But there's no question it's impressive. It's pretty significant. So I appreciate that. Any questions from my panel members here. Thank you very much for your presentation. I'm sure it will have an impact on our analysis.

MR. HORNER: Thank you.

PRESIDING MEMBER BOYD: The next speaker was Randall von Wedel, if I've said that properly, I hope. It will be Dave Modisette after that.

MR. VON WEDEL: Thank you for the opportunity this afternoon to have a chance to explain some of our perspective on bio diesel. I'd like to start by thanking the Commission, and of course Carb for putting together an excellent program in the last two days just across the city here regarding the potential for alternative diesel fuels that include diesel.

This afternoon I'm here pretty much as a voice for a bio diesel community, a group of bio diesel programs, projects that have been developed in California over the last ten years. My background is in the medical biochemistry field.

I got my Ph.D. at UC Medical Center in

San Francisco, and have spent 15 years of my life dedicated to developing frankly innovative technologies and trying to promote technologies for both reducing pollution, air and water, but also for cleanup of contaminants.

I run an environment microbiology laboratory in Point Richmond. I work very closely with several oil companies to develop biodegradation strategies for MTBE and TBA, and work a lot on large scale cleanup projects that are based on NC2 contamination problems.

Today I'd like to tell you why we're here and why we're interested as a group, and I say a group, the California group. You've heard just a moment ago from Steve Howell, and you have written comments from Scott Hughes giving you a national perspective. But those of us here in California who are so concerned about our air pollution issues would really give a moment to the consideration of bio diesel here as an alternative fuel that displaces diesel fuel in very specific applications.

And yet has the opportunity to be a large scale mainstream program in a small percentage of fuel. What I want to emphasize is

the bio diesel has not only the environmental impact that we've talked about. You've heard about the reductions in emissions.

There are some constraints on the economics that we think we can overcome because we'd be developing, as you heard, rural programs to have domestic renewable fuel here in California. But we also have the issues closer to the supply question. Bio diesel supply is actually fairly abundant right now in California.

We have a lot of feedstock, as you heard Steve mention. And at this very moment we have fleets ranging from Los Angeles to Berkeley, California on various percentages. We have not only truck fleets and school bus fleets, we have burners going. We have some stationary generators.

You may have caught the press recently that the City of Berkeley announced back in June that the entire public works fleet of trucks and buses, as well as school buses, street sweepers, the entire infrastructure of diesel vehicles in the City of Berkeley is now running on B100. That is 100 percent bio diesel. Clearly, as a demonstration, we don't ever anticipate that to be

a large program statewide.

But it gave us a chance to really demonstrate the potential for displaying a diesel petroleum product in a very effective way. That program evolved from a series of small projects that date back to 1999 when UC Davis, your local campus for the university here, became the first B20.

That is 20 percent fleet in California. It's actually still today one of the first and largest universities using B20 for the entire campus fleet. We started some of the first bio diesel marine applications. We have ferries running right now in the San Francisco Bay on a trial basis.

We have an entire fleet of research vessels down in Ventura, California for the National Park Service. And what I'm trying to emphasize is that bio diesel is already here. The infrastructure for it is self-sufficient. The bio diesel infrastructure is basically passed through the existing petroleum infrastructure.

So all of our deliveries, as we did just last week to UC Davis, are deliveries to the fleets down in Southern California are ten day

deliveries. Every ten day deliveries to Berkeley are just conventional petroleum distribution systems. And it's a transition that makes really very little impact on any type of infrastructure questions, or any even tax questions.

I mean it's a transparent and very simple transition. We wanted to emphasize beyond the public health questions that the concerns over economic issues could be a long-term, be diminished by the fact that we can produce much of the bio diesel in California. Fortunately, at this point, we are getting all of our fuel right here within California.

We have several major plants under construction, in addition the two existing plants in Southern California. These plants and the infrastructure that would go into producing bio diesel here would add to the local economy, particularly the rural economy. As Steve mentioned, we're very interested in the macro benefits of the economics.

And one of the issues we brought up was the fact that bio diesel is degradable, biodegradable, product, and one that's nontoxic. And I always love to tell people a nonvolatile

nonflammable fuel. And yet obviously a very effective diesel fuel substitute.

That product actually is close to a solvent product that we've developed in our group that is now being used for responding to oil spills in pristine areas like marsh's and tide pools, and even rivers. Just to emphasize that in this case the California Department of Fish and Game had approved, and now uses a product that is 97 percent similar.

It's virtually the same as the product that goes into bio diesel. And there it is being used to clean up contaminated or spills that occur occasionally unfortunately in our rivers and streams. I'd like to finish by saying that we represent a group of researchers, community people, activist.

We have coops now with bio diesel. We've got all kinds of websites. We have forums. As I mentioned the entire City Council of Berkeley stands behind the bio diesel program as a demonstration and leadership in environmental technologies. But we want to be here to try to help the Commission and help future policy making and try to provide real world data.

We're collecting a lot of fuel data from tailpipe emissions that we're doing in conjunction with other agencies. We'd like to be here to help in our support. So we'll always be available, and we look forward to working with your staff in that regard. Thank you for the time.

PRESIDING MEMBER BOYD: Thank you. Any questions. This is almost not appropriate to this report, but I'd like to ask you a question since you mentioned the word "marine diesel", and I'm a boater. And I don't have a diesel engine, but last week in May, many, many months back issues of my boating magazine that I haven't gotten around to, and I followed through many months of the magazine.

The saga of a writer, a magazine writer in the Bay Area, and their valiant attempts to use bio diesel in their marine engine, and the horror stories that accompanied that with constantly clogged filters, incompatibility with clogged fuel lines, incompatibility with various components and what have you.

It's not a person I know, but since other people will read the magazine and read the articles, it maybe getting a bum rap

inadvertently. So maybe sometime I can refer this to you, and since it's in your area, it's somebody who lives in the Bay Area. I don't know what their problem is and I don't want it to poison my thinking about bio diesel.

But interesting, as these people tried valiantly over a long period of time to be environmentally conscious, they seemed to be frustrated at every turn.

MR. VON WEDEL: Yeah. We hear those frustrations. I actually conducted a survey of 100 bio diesel users. Let me start by saying that's a common problem on diesel engines anyway. I've had several experiences with friends on boats, forget about bio diesel, just diesel.

Because those boats often spend a lot of time sitting and they go through our rapid, as we know, transitions in temperature, and heating and cooling in the day, just think about a boat parked here in the delta and how much the temperature changes day to night, and then the fog comes in and so forth.

The growth of bacteria and mold, which is a field I happen to be very familiar in, in the tanks is very common. And of course that residue

and slime that accumulates inside the tank can be then in effect cleaned off by high concentrations of bio diesel, say it be 50, or perhaps this gentleman tried 100 percent, which we run many boats on.

If they hadn't properly cleaned their tanks first, or changed fuel filters, or perhaps used low concentrations of biocides and future growth, they would run into that problem. That was established years ago. We published an article on that, and we have actually a handbook that's on a website. It's also available through the MBB that explains in detail how to avoid that.

The compatibility issue, we did a survey of 100 boaters, and we actually went through all the boat engines and interviewed the owners to find out where they may have had trouble. About 15 percent of them did have trouble, but generally those are older engines. And it was just simply as it would happen today with older trucks.

We've done bio diesel studies for the City of San Francisco on these old Detroit diesel two-stroke engines. They called it the pig. It's one of the ugliest heavy duty engines that the City of San Francisco owns for garbage hauling.

It's actually a Packard truck.

Those old engines do have compatibility issues because in the 1980s they just didn't have the elastomers that we have today. So all the new engines, of course, that's not a problem. And of course a new boat with a new fuel tank is not going to have this accumulated biological growth that would rapidly grow up with bio diesels.

So that's been addressed. We have the handbook. I could provide a copy to you. It's also on our website. And it's also available through the MBB. But that's an unfortunate story. It happened a lot. And as I say, about five percent, all the boaters that we interviewed, had some type of trouble. And then we later found out they hadn't made those precautions.

I should tell you that we have 192 trucks, buses, street sweepers, and heavy equipment running today on pure bio diesel, which, again, is not we're aiming for in mainstream. But those vehicles had very, very few problems. And it's because we took precautions at the beginning to be sure that we had clean tanks, clean filters, and that we handled our fuel properly.

PRESIDING MEMBER BOYD: I appreciate

that. I'll try to forward this to you because this person writes a monthly article about boating in the Bay, and it's not doing the business any favors. Not bitter complaints, just frustrations.

MR. VON WEDEL: We'd love to talk to him. Thank you.

PRESIDING MEMBER BOYD: Anyway, thank you. Dave Modisette. And is Dean Taylor here? Then you'll be next, Dr. Taylor.

MR. MODISETTE: Good afternoon. I'm Dave Modisette. I'm here today as the executive director of the California Electric Transportation Coalition. I think most of you know that the coalition is a nonprofit organization of mostly private sector companies that are working together to try to develop and commercialize many forms of electric transportation, not just on road electric vehicles, but lightrail, electric buses, and non-road electric vehicles, which is really the subject of my presentation today.

It's by great pleasure to be speaking to such a distinguished panel today. Normally I speak to legislative committees, and term limits is definitely taking its toll in that regard. So I really appreciate --

PRESIDING MEMBER BOYD: That was courageous.

(Laughter.)

MR. MODISETTE: I think most members would agree actually. So, you know, my presentation today is really very, very narrow. And sometimes that's good, because I think it's a little easier for us to get a handle on some of these very, very narrow issues. Let me say at the outset that we supported the AB2076 report.

We support the current staff draft that's in front of you. You know, my purpose here today is just to provide a little education about a subject that was not mentioned in the report. The report did spend some time talking about on-road electric vehicle usage. And we don't have any quarrel with that.

But it did not say anything about so called non-road electric vehicle usage. And that's a market that I think you'll is not only quite significant today, but has the promise of being much larger in the future, and providing significant benefits, not only in terms of reduction in criteria pollutants, greenhouse gas emissions, and also petroleum.

I've given you two documents, which are really the source documents for the information. Both documents were actually prepared by consultants that are quite well known to the Commission. The first document was prepared by Arthur Little, which later became the TIAX group.

TIAX obviously has been kind of long standing technical support contractors to the Commission. And the second document, which is and EPRE publication was also done by TIAX. So the first document I'm going to refer to is the one that talks about electric vehicle markets.

It was actually done in response to questions from the Public Utilities Commission about the market for electric vehicles. And what I did just to simplify this was I xeroxed three pages from that, and they're attached, you know, with a paperclip to the front of that report.

So I'm going to start with table two, dash, three, California on road and non-road EV population. And let's just, you know, skip over the on-road EV numbers and look down to the non-road EV numbers that are below that.

So just to define the category for you, these are things such as airport ground support

equipment, bag tugs and belt loaders, various classes of forklifts, of course golf carts where there's a requirement that new golf carts be electric in California, sweepers, scrubbers, varnishers, industrial tow tractors, burden and personnel carriers, and electrified truck stops.

That also includes truck refrigeration units where a truck can plug in when they're at a loading dock or some other distribution facilities such as that. And I think, you know, just to kind of jump to the conclusion, you can see that in 2002 there was already more than 300,000 pieces of this electrified equipment in California.

What's also on this page is a linear extrapolation 22011 of what the population might be. And I'm going to come back to that linear extrapolation in just a minute. But you can see that the numbers do contain a significant increase to 22011. Then on the next page, table three, dash, one, give you the power consumption of those vehicles.

And, you know, because I worked at the Energy Commission for so long I'm kind of used to thinking in terms of, you know, megawatts and kilowatt hours. And you can see that the

electrical consumption of these off road units is quite large, even if you take out the on road units, which is relatively small, there are still more than 800 megawatts of this on-road -- excuse me, non-road electric vehicle equipment in California today.

And just as a footnote let me say that that also raises concerns about load management and energy efficiency. So, although, you know, we're making a transition to a much cleaner fuel, we also need to be cognizant of the fact that that electric load needs to be managed in the future.

You'll see too that the estimated 2011 load is going to be significantly higher as well for both on road and non-road, perhaps as high as 2,000 megawatts. Then the third and final page for this document, table A, dash 11, gives you the gasoline and emissions displacement by these vehicles as projected in 2011.

And, again, you can see it's still very, very significant between 24 and 107 million gallons of gasoline displaced by this equipment in that time period. And NOx and ROG between nine and 51 tons per day of emissions reduced. I guess I want to say that these linear projections I

think don't capture the entire potential in this category.

And there is significant work that's going on both by the California Air Resources Board and some of these individual air districts to provide additional regulatory incentives to try to increase the technologies in this area. Now I'm going to refer to the second document there, the one that says 2003 possible SIP measures.

And what this was, this was really an exercise that was done for EPRE where contractors, you know, and said, well, what if there were SIP control measures for these seven technologies, what would the impact of that be? So I'm just going to refer to the single page that's attached to that document.

And what happens in these SIP control measures is that eventually, you know, after some period of time, you know, some phase-in, eventually all new equipment in this area would be 100 percent zero emission, or electric in the near term. And I guess what I want to call your attention to is the NOx and hydrocarbon reduction, or displacement number, which is there in the second column.

Between 74 and 97 tons per day reduced in 2010. That's a huge number. It's a number that just from these seven measures itself could entirely wipe out the discrepancy that we're now struggling with in the South Coast and the San Joaquin Valley, and some of the other air district.

So if we could actually achieve this level of reduction, it would be huge. And to just kind of call to your attention the cost of that in terms of dollars per tons, there on the right hand side you can the cost of these measures for the most part is very low, is very reasonable. Most of these measures are below $2,500 per ton of NOx and hydrocarbons reduced.

And that's really the end of my presentation. I just kind of wanted to call to your attention this particular sector. I think it's an important sector. We would like to see it mentioned in the report along with the non-road electric vehicles.

Again, I think it provides significant opportunities not only for emissions in criteria pollutants as shown in this table, but you'll see in some of the accompanying write ups there, which

goes through these measures individually, it gives reduction in greenhouse gas emission, and also in petroleum displacement.

So thank you very much. And I'd be happy to answer any questions.

PRESIDING MEMBER BOYD: Thank you, Mr. Modisette. I appreciate you pointing this out to us. You know at least this one person is a very receptive audience to this discussion. And I'll see to it that we make some reference to this. Actually, I kind of drifted away from the area obviously by changing vocations here.

But this is an area that when I left the Air Board many years ago, i.e., you know, not necessarily the personal vehicle, but the commercial sector I thought was very ripe for electrification, delighted to see your organization has pushing in this area.

And I don't know if I should pick on Mr. Scheibel right now or not, but wiping out the black box in the south coast air basin sounds a pretty good pro quo here. I don't know where these stand, and we don't have that much influence over what local air districts put in there, in their control measures and their SIPS and what

have you.

But it certainly sounds intriguing and promising from that potential, which is its greatest potential. So I'm impressed. Thank you.

MR. MODISETTE: And I can't say that I'm completely up to speed on what's happening in the individuals districts. I do know that the ARB does have proceedings on a statewide basis on the forklifts, on the transportation, refrigeration units, maybe on the truck stop electrification.

And then beyond that, individual districts have picked up a number of these measures as well.

PRESIDING MEMBER BOYD: I know truck stop electrification is something that this agency is very interested in. And maybe I should refer to Commissioner Geesman here who's in the research committee, and has probably faced this issue. Did you see you motioning towards a microphone?

COMMISSIONER GEESMAN: Actually, I had a slightly different question. I do know that we have done something with idle air. My question, Dave, is whether you happen to know how our demand forecast treats this area, if it treats it?

MR. MODISETTE: You know, I don't know.

And, you know, frankly, I think it's only been in the last couple of years, you know, when it's come to our attention that there is this kind of significant load in these areas. I think, you know, we would like to move aggressively now with some, you know, load management and energy efficiency programs in these areas.

We don't even know, you know, to what extent this, you know, equipment is operating on peak, although my suspicion is that the majority is operating on peak. So I think there's some real, you know, opportunities here both on the electric side and in terms of, you know, the other benefits that I mentioned.

COMMISSIONER GEESMAN: Thank you.

MR. MATTHEWS: Commissioner Boyd, I have a partial response to Commissioner Geesman and then a question. We have done some work in the energy efficiency area with SEEA, I think Manuel, I see Manuel back there, Alvarez, from CEE, to try to shift the forklifts especially to off-peak because they tend at the end of the day, 5:00, go right to the bank and charge up when they don't really need them until the following morning, and you charge them anytime.

They don't need to be on there all night. And we've done some work in that area. And my question for you, Dave, is that I know with the electrification, although there's a major quality benefit, there's also benefits to the truckers themselves that often run the engines and lots of other issues.

I'm sort of surprised at the magnitude of all this, not having really looked in the area. Are there other reasons for these other areas besides regulatory reasons that people are choosing electricity as the energy source than gasoline or diesel?

MR. MODISETTE: Well, yes, the fact of the original driver was just a plain market driver, and that is, you know, like the truck stop electrification is a good example, you know. It's much cheaper to, you know, to use electricity to power, you know, air conditioning or other ancillary equipment on the truck rather than keeping it running, you know, sitting there, just kind of idling for hours at a time.

And so the original drivers, you know, were not regulatory drivers. It's only been in the last few years when we've kind of seen the

growth of these regulatory drivers. Obviously for the forklift market, the early forklift markets were indoor markets. They're warehouse, you know, forklift where, again, you know, concern for indoor air quality was kind of driving that, you know.

But now what you're seeing is the transition of these electric forklifts, even to the outdoor markets, and to the outdoor areas where there's, you know, more issues of terrain and other things like that. So, you know, I think one of the good news in this area is that there's also an economic benefit in most cases to the customer.

And that's why you see these, you know, these very, very low numbers in terms of dollars per ton reduced.

PRESIDING MEMBER BOYD: Thank you, David.

MR. MODISETTE: Thank you.

PRESIDING MEMBER BOYD: Dean Taylor, Southern California Edison.

MR. TAYLOR: Dean Taylor, Southern California Edison, pleased to be here. Since this is kind of a segway I have to thank you for

calling out the forklift program. We were very pleased to do an experimental program on shifting forklift load. The guy in the next office to me ran that program, so I kind of heard it over the walls.

It was just exciting to be part of the contribution in our little group in electric transportation to, you know, the California energy crisis. We feel this is a huge, you know, untapped area that kind of went under the radar screen. Not only is there potentially a lot of megawatts to be shifted, but there's probably a lot of energy efficiency potential.

Nobody has really looked at this technology. A lot of it has been around since War World II, the same old thing. And, you know, electric vehicles have brought in so many advances, a lot of those same technologies can be applied to forklifts we feel. We're just now starting to do baseline, you know, testing of what is the potential there.

But potentially, you know, just like with air conditioners and refrigerators with the rebates, there's a lot of potential there, because the more efficient ones would also cost more. I

assume you have copies of my presentation. It looked quite long, and I'm only giving the first like quarter of it.

I hope you'll find plug-in hybrids, which is the subject of my presentation, as exciting as I do, and take a look at the other ones. I have a couple other copies, in color mind you, if anybody needs them.

PRESIDING MEMBER BOYD: Actually, I don't think we have been afforded the copies of your presentation.

MR. TAYLOR: I apologize. I thought maybe you guys -- do you have this on -- I had sent this ahead of time as far as being projected. You don't have it. I sent it to somebody. How do I run that, from here?

UNIDENTIFIED MALE: From our technical expert.

MR. TAYLOR: Here's my other copy then.

PRESIDING MEMBER BOYD: You're up there in color. So we have screens right in front of us.

MR. TAYLOR: Great.

PRESIDING MEMBER BOYD: We got one.

MR. TAYLOR: The real summary kind of

statement regarding plug-in hybrids is that the best way to think of them is as a combination of fully functional electric vehicle, you know. For example, five days a week. And a fully functional engine dominate hybrid so you could take it on weekend trips, or for whatever other purposes.

They contain all the features that consumers love about battery EVs, plus the long range and the large market potential of the hybrids that you're seeing today. And a couple other things kind of stand out, one is unlike all the other clean advanced vehicles out there, the primary infrastructure already exists, 120 volt outlet in your garage.

And the preliminary studies that have been done are showing 86 percent of people have access to this plug. So another way to think of them is that they're somewhere in-between a full size ZEV and an engine dominate HEV. So the engine would be smaller than your no plug hybrid, but your batter is bigger.

For example, you might have a 6KWH battery on it instead of 3KWH battery, whereas let's say the RAV4 EVs that you see running around would be much, much larger with a 30 KWH battery.

Some of you may be familiar with the subject, so I'll kind of jump to the chase, what is new in the last, you know, few months.

Basically, the Carb staff in April said that the plug-in hybrids are the low cost way to comply with the silver category, at least in the early years. They kind of looked at the different, you know, technology. So Carb is very interested in insentivizing these.

The CEC reports that Dave referred, the AB2076 report, found that the plug-in hybrid 20 to have the highest cost benefit ratio of all the fuel substitution technologies. And Southern California Edison obviously joins being supportive of that whole process. I'd also add in there was a finding, I believe, maybe it's in this report that I should mention before I forget.

It was recommendation number four for a long-term committee to be put together. We, as well as Cal ATCE and other utilities, would be very interested in, you know, participating and working at the long-term potential. The CEC report also found that the plug-in hybrid 60, I'm missing the word 60 there, does very well.

And it raises the question about is

there an OEM, which is obviously something we've heard a lot and we've worked very hard to find an OEM. And I'm very pleased to announce that there will be a press conference in September with one of the big 6 OEMs. That's all I can say at this point, a little mystery.

And there will be involvement from EPRI. SEC and several agencies have given quite a bit of money to this project. So we're very excited that, you know, the executive VP of this OEM has, you know, directed their press people to, you know, be involved. So pay attention there. You probably will be receiving invites shortly.

Other OEMs have been involved in plug-in hybrids over time. Nissan proposed to Carb that they be in the program. And Renault, which actually has a plug-in hybrid on the market in Europe, is an owner of Nissan. So there is some connection there. Volvo and Mitsubishi, way back in '95 may have been way ahead of their time.

They were advocating plug-in hybrids to carb way back then. Recent OEMs have acknowledged at various meetings that plug-in hybrids certainly makes sense in Europe. Obviously the price of gasoline difference makes a lot of things more

attractive over there. And there are various current and pending projects behind the scenes with several OEMs.

In addition, I list five OEMs that are coming to the EPRI sponsored HEV Alliance meetings, which are just more like a public forum. The Energy Commission participates in that as well, and we appreciate having Energy Commission staff join us. The main thing that I'll be talking about is a bunch of numbers here, and it's part of this very large study that has been going on now, phase III.

But phase I was over two million dollar, three-year effort. It was sponsored by EPRI Carb, the South Coast Utilities. It was a very comprehensive look at all the questions you could possibly ask at a high level looking out to the future, cost, prices, performance, market potential, consumer societal benefits, etcetera.

And it was a very blood, sweat and tears effort basically, because all these people, not only participated, but also had to agree on consensus, including, you know, GM, Ford, Carb, South Coast, DUE, UC Davis, National Labs, and others. And a lot of the researchers that you're

familiar, including Fritz Karl Hammer and Stephen Unash and others participated.

As well as we used the OEM's own market research firms. So the one that is probably getting a lot of attention has the smaller battery pack in HEV 20. We looked at this in four sizes of vehicles from a small car all the way up to a full size SUV.

These numbers here I'm quoting you are for a mid size car, but basically you can go on the original NiMH pack 40 to 75,000 miles, plus an additional 100,000 miles using your gasoline engine in a power assist mode. Compared to and HEV0, which is another way of saying an engine dominant hybrid, you would get 30 to 40 percent less NOx and ROG, 20 to 30 percent less CO2, and 42 percent less petroleum and trips to the gas station.

The gasoline consumption I think is one of the most interesting charts, especially I would think to the Energy Commission. This chart looks at those four vehicles I mentioned we studied. And the tall bars are the conventional car. The gold bars would be the power assist hybrids.

These are, by the way, not a mild

hybrid. They're a fully integrated full hybrid, getting about as much as you could expect to get from a power assist engine dominant hybrid. And the HV20 is the red bars. And the HEV60 is the green bars.

So you're seeing petroleum reductions as high as 80, you know, 85 percent, you know, over, you know, 50 to 60 percent when you're comparing to the base case. Pretty impressive numbers. Lifecycle cost, the interesting thing happening here is that the battery is lasting longer with four or five sources, including Edison has, you know, RAV4s that are headed towards 120 and 130,000 miles on their original NiMH metal pack, as well as plenty of other very interesting tests.

Even Dr. Anderman was saying that, you know, very well made NiMH metal batteries are lasting. The other thing that's changing everything is the announcements. And I have some quotes if you look at the Toyota saying they're going to do a million hybrids per year. And GM saying, wait a second, we're going to do a million hybrids per year.

If those come even close to true they will have amazing price reductions, and they will

have big impacts on plug-in hybrids as well as battery EVs. So that's what this is showing you here is that when you add in the blue, which is the up front cost, plus the yellow, which is the fuel cost, and the purple, which is your maintenance savings, you're going to -- I did backwards, the purple is the fuel savings.

You're going to be able to pay for this. And surprisingly, a little side note, is you're getting it at a very surprisingly high price for the battery. You don't have to get down to $150 per kilowatt hour, as people once thought. You can reach this lifecycle cost parity up at around $400 a kilowatt hour.

Kind of in summary, you know, they provide real ZEV miles. They have no significant technological hurdles, and can be available in the near term. The incremental cost is manageable, and very clean electricity grid infrastructure is available today, especially with 120 volt plus.

They're the next best thing to a BEV, and address the two major barriers that BEVs have seen, which is marketability and battery cost. They're one of the best ways to reduce the price of energy battery. BEVs and plug-in hybrids use a

slightly different type of battery, you know.

Their NiMH metal both is what you'd see in APREAS, but they have a slightly different chemistry with more focus on energy. And those batteries would be very useful in both BEVs and fuel cells. So we see them as a key to getting those batteries lower in cost.

And I think they bridged forward to the fuel cell and back to the BEV. Conclusions, I mentioned one already. Two, is that the very large greenhouse gas and criteria reductions, if you go into the details in the back of the presentation that I provided up there, you'll see a lot more of that as far as the details on how much the lifecycle cost parity can be reached.

And when you add in -- there's two ways of doing lifecycle costs, one is just from the manufacturer's prospective. And this is done rather from the consumer prospective. If you add in the fact that electricity from any of these cars comes out to be 50 cents per gallon, 70 cents per gallon, right in there, you know, you're basically able to, from the consumer prospective, pay back your investment in this.

So you're getting your pollution

reductions, or your petroleum reductions, for no additional cost. And then the battery technology has advanced, even Carb recognized that in their staff reports that they recently published if you look carefully. And all kinds of interesting things could happen in the future.

That's why I mentioned battery leasing here at the end just to give some food for thought on that. And that's essentially my presentation. I should mention the utilities with this OEM announcement are planning on using plug-in hybrids as much as possible to meet our compliance for the federal requirements for fleet mandates.

We'd like to understand more about, you know, their system impact and obviously encourage their off-peak use. And another thought to leave you with imagine if this really did take off in a very large scale way. We're talking about, you know, millions of these vehicles could maybe even start to fill up the nighttime valley in terms of that, and have a very efficient use of the generation transportation and distribution systems, helping make more efficient use of everything.

And there are people out there that are

talking about mobile distributed generation as a way of even providing emergency backup power, ancillary services to the CAL ISO. So all those are some of the reasons why the utilities are involved. And that's it.

PRESIDING MEMBER BOYD: Thank you. Any questions. Mr. Geesman.

COMMISSIONER GEESMAN: I just thank you for your presentation, and also commend your company for the leadership you've shown on this in working with IEPR in further pursuing the area. I think it's a real contribution.

MR. TAYLOR: Thank you very much.

PRESIDING MEMBER BOYD: I would ask does your company include a projection of demand for eclectic vehicles in its assessments of the future, the power requirements, i.e. Edison?

MR. TAYLOR: I don't know. Are you talking about the formal things we submit?

PRESIDING MEMBER BOYD: I was expanding on Scott's question here earlier.

MR. TAYLOR: I do know that, you know, we were one of the funders of the report that went to the Public Utilities Commissioner that Dave was referring to when he quoted those numbers of 800

megawatts for the non-road, and that that may grow. I mean we would say we're strongly committed to having it not grow.

We think that you can end up with a win-win situation and have, you know, all the non-road charging it at night. So in fact you could lower that 800 megawatts. That you end up having a win, you know, for California in that regard, being able to get all the benefits, as well as have it all done off-peak.

Because it's fairly natural I think for both non-road and plug-in hybrids to have people, you know, charge when the day is over.

PRESIDING MEMBER BOYD: And I comment you, your company also, for hanging in there, the plug-in hybrid has had a tough road to hoe for a lot of years, but it looks like it's made it.

MR. MATTHEWS: Can I ask a question?

PRESIDING MEMBER BOYD: Certainly, Scott.

MR. MATTHEWS: I'm assuming that the homeowner, or the vehicle owner, has to have a time differentiated rate and a meter to go along with that. I was sort of thinking about the integration here of the entire IEPR. Because we

are getting a lot more meters out there, but it's been somewhat challenging to get both the rates and the meters, to the smaller users especially.

MR. TAYLOR: I think that's an area where we could, you know, have further discussions and dialogue maybe as far as this long-term recommendation for industry to work together. I mean I think we're skeptical on the need for having more meters. Part of what we were trying to do in plug-in hybrids is just keep cost down as low as possible.

And I think we have some creative ideas on how to maybe do it without meters, but it's probably a longer conversation. Just given that it's hard for a second duel meter adapter to pay back and everything like that to make it, you know, cost effective. But we're open, you know. I think it's not a decided thing.

And that's another factor why the 120 volt, I mean we've done a lot of looking at that. But a large factor is just convenience to the consumer, as well as keeping the cost as low as possible.

PRESIDING MEMBER BOYD: Thank you very much. Well, I have no more blue cards. Is there

anyone out there in the audience, what's left of the audience, who I skipped over or who wants to say something?

Mr. Scheibel, I commend you for sticking with us to the bitter end. Is there anything, Mike, you'd like to say? Any comments on electric cars, my favorite hobby?

MR. SCHEIBEL: I'm missing the electric car that ARB allowed me to drive for a while. It's too bad it went back. I don't have a lot to say, other than the Commission staff and the ARB staff have a very good working relationship, and we are coordinating very closely.

The recommendations in the report, we worked many of those out in the 2076 report. And that was both approved by our board and the Commission. In terms of fuel supplies and the policy, I mean the general policy is pretty clear from our standpoint. We want the cleanest possible fuels.

And availability limits that. If we were to go in and just use the engineering principles we know and design a fuel, we'd have almost no sulphur and lower T50 and T90, and a few other things that we don't have because we know

we've got to have enough fuel for the California consumer.

So getting the fuel we need, and keeping it available in terms of supply at some sort of acceptable price, is also a high priority. But I see no inconsistency with trying to minimize the amount of fuel we need. And I can see no reason why Californians in 17 years wouldn't be better off instead of consuming 400 gallons a year for the average vehicle, consume 250 or 270 gallons a year.

The air quality would be better. We'd be better economically. So I don't quite buy the industry arguments that somehow we're doing something devious by attempting to use technology and other things to get people to use less fuel. The environmental will benefit, and the state will benefit economically.

PRESIDING MEMBER BOYD: Thank you, Mike.

MR. SCHEIBEL: And I assure you there's more than enough room in the black box in the South Coast for all the measures that were discussed today. And we are examining every single thing we possibly can.

PRESIDING MEMBER BOYD: I'm sure you

are. Thank you. Mike, while you're standing there, I'm suddenly reminded of something that we didn't discuss today at all, that we did identify in earlier reports, not one that your agency worked on I don't think, 2076, well, not the reducing dependence part, but earlier in the SFR I believe our consultant, in identifying, quote, barriers in California referenced the UNI CAL patented.

And we didn't talk about that at all today. But I just wondered what are the views of the ARB and the fuels people about that being any kind of a barrier to fuel availability or something that affects the cost of fuel adversely or etcetera, etcetera?

MR. SCHEIBEL: It's clearly something of a stumbling block anyway. And we hear reports of certain entities that might think about importing fuel into the California market, but kind of weigh that as a problem in terms of producing -- if the fuel they would produce and meet our standards somehow is covered by the patented, that's a liability that discourages them from considering that.

The FTC process is going ahead. We're

hearing on that. I know ARB staff have been involved in multiple depositions and other things. And we're hopeful that that will turn out to something that's positive, and maybe the patented will turn out not to be an ongoing barrier into the future.

As you know well, I was surprised, and you were surprised, when we found out about it. But it's just something we cope with. And I imagine it is adding cost that we didn't anticipate, and somewhat shrinking supply a little bit.

PRESIDING MEMBER BOYD: Well, it's very fresh in my mind, one, because we talked about it in the past. And, number two, I will spend my day tomorrow being deposed on the subject. In any event, I just want it on the record that it has been identified and still remains somewhat of a, quote, barrier, and it was a surprise to many of us.

MR. SCHEIBEL: Actually, since I have the mike I'll bring up one issue that we're sensitive at ARB, because there was earlier discussion about boutique fuels and whether or not California's boutique were balkanized. And I

don't think most people would consider France, or Germany, or England, or Japan's fuel markets to be boutique fuel markets.

And California's fuel markets is larger than any of those countries, for gasoline anyway. So when EPA did its analysis of, quote, boutique fuels, I think they were more looking at the fact that when you cross the border from Indiana to Missouri you have a different ethanol content, or oxygen content, and actually held up California's standards as if we went to some sort of set standards.

California's fuel had a good rationale. We had a serious air quality problem, and it performed very well from an air pollution standpoint. So, yes, we have different specifications, and we need those specifications to meet our combined environmental goals, along with our economic goals of having enough fuel.

But I don't think if you characterize boutique fuel problem in California really fits into a boutique unless you think that Walmart also qualifies as a boutique.

PRESIDING MEMBER BOYD: Well, I agree with you and I refuse to use the word unless it's

used by someone else and I need to comment on it. But anyway, thank you for your comments. And thanks again to ARB for all their cooperation. It's been heady days lately, and I look forward to more. I'm sure we heard some things today that we'll need to consult on in helping us finish this report.

MR. SCHEIBEL: I'll be here next week.

PRESIDING MEMBER BOYD: Yes, very good.

MR. SCHEIBEL: The continuation of the hearings on the integrated report. So thank you.

PRESIDING MEMBER BOYD: Thank you. If no one else steps forward, I thank you all for your patience and your contributions. Thanks for the staff for a job well done today in preparing us for this. Now our collective work is cut out for us. And with that we're adjourned. Enjoy your late lunch.

(Thereupon, at 1:30 p.m., the workshop was adjourned.)

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CERTIFICATE OF REPORTER

I, Alan Meade, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 29th day of August 2003.